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Gynecology & Obstetrics

Covid-19 Infection in Pregnancy

Pregnancy with Hepatitis E Infection

Highlights

Case of Transient Cortical Blindness

Knowledge Regarding Uterine Prolapse

Discovering Thoughts, Inventing Future

VOLUME 20 ISSUE 6 VERSION 1.0

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A Study on Maternal Outcome with COVID-19 Infection in Pregnancy

By Dr. Sarah Shaikh & Dr. Tushar Palve

Introduction- The pandemic caused by the Severe Acute Respiratory Syndrome coronavirus 2 (SARS-CoV-2) causing an atypical pneumonia has exposed vulnerable populations to an unprecedented global health crisis. Severe Acute Respiratory Syndrome coronavirus 2 (SARS-CoV-2) is highly infectious and has spread rapidly around the globe at an accelerated rate [1]. Originally, SARS-CoV-2 emerged in Wuhan, Hubei Province, China, during December 2019. [2,3] Following infection, admission to intensive care units is common and a case fatality rate of up to 35% has been documented.[4, 5] Several studies focusing on infected individuals from the general population have been reported; however, limited information is available on pregnancy outcomes for women with COVID-19. The physiological changes occurring during pregnancy make the mother more vulnerable to severe infections.[6] Such as, alterations in cell-mediated immunity leading to the increased susceptibility of pregnant women to be infected by intracellular organisms such as viruses. [7]

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A Study on Maternal Outcome with COVID-19 Infection in Pregnancy

Dr. Sarah Shaikh [α] & Dr. Tushar Palve [σ]

I. Introduction

The pandemic caused by the Severe Acute Respiratory Syndrome coronavirus 2 (SARS-CoV-2) causing an atypical pneumonia has exposed vulnerable populations to an unprecedented global health crisis. Severe Acute Respiratory Syndrome coronavirus 2 (SARS-CoV-2) is highly infectious and has spread rapidly around the globe at an accelerated rate [1]. Originally, SARS-CoV-2 emerged in Wuhan, Hubei Province, China, during December 2019. [2,3] Following infection, admission to intensive care units is common and a case fatality rate of up to 35% has been documented.[4, 5] Several studies focusing on infected individuals from the general population have been reported; however, limited information is available on pregnancy outcomes for women with COVID-19. The physiological changes occurring during pregnancy make the mother more vulnerable to severe infections.[6] Such as, alterations in cell-mediated immunity leading to the increased susceptibility of pregnant women to be infected by intracellular organisms such as viruses [7]

Anatomical changes occurring in the body such as an increase in the transverse diameter of the thorax along with an elevated level of the diaphragm decrease maternal tolerance to hypoxic changes.[8] Alteration in lung volume and vasodilation can lead to mucosal edema and increased secretions in the upper respiratory tract that further impede respiratory exchange. [7]

The SARS-CoV-1 outbreak that occurred during 2002-2003 was associated with a high maternal mortality rate (case fatality rate of 25%), spontaneous miscarriages during the first trimester, intrauterine growth restriction in the second and third trimesters and subsequently poor perinatal outcomes.[4] Similarly, Alfaraj et al. [5] reported a case series of 11 patients with MERS-CoV infection where the case fatality rate was 35% for pregnant women and 27% for infants. Nevertheless, a recent editorial on COVID-19 in pregnancy [9] argues that management guidelines should be based on data from the current epidemic rather than drawing on the limited experience from previous outbreaks, as their epidemiology, clinical course and response to treatment may differ.

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Chen et al.[10] reported the maternal–neonatal outcomes and vertical transmission potential of COVID-19 pneumonia in pregnant women. More studies need to be conducted in order to outline the maternal, perinatal and neonatal outcomes of pregnant women in the current pandemic. Hence this case series study was conducted to assess the impact of SARS-CoV-2 infection on pregnancy outcomes.

II. Aims and Objectives

The aim of this study is to summarize the clinical manifestations and maternal outcomes of SARS-CoV-2 during pregnancy.

The objective of this study is to evaluate the following parameters in relation to pregnancy outcomes:

- Maternal investigations for COVID-19
- Symptomatology in pregnancy
- Preterm delivery (PTD)
- Mode of delivery/ Outcome
- Intensive care unit (ICU) admission
- Need for respiratory support

III. Materials and Methods

A study of 206 pregnant women with COVID- 19 infections was conducted from March to June 2020 in an urban tertiary care hospital with inclusion and exclusion criteria.

Eligibility criteria for the study included only laboratory confirmed COVID-19 infection using quantitative real-time polymerase chain reaction (qRT-PCR). Positive test reports of COVID-19 Antigen or antibody were re-confirmed with nasopharyngeal or oropharyngeal swab tests.

Exclusion criteria were as follows:

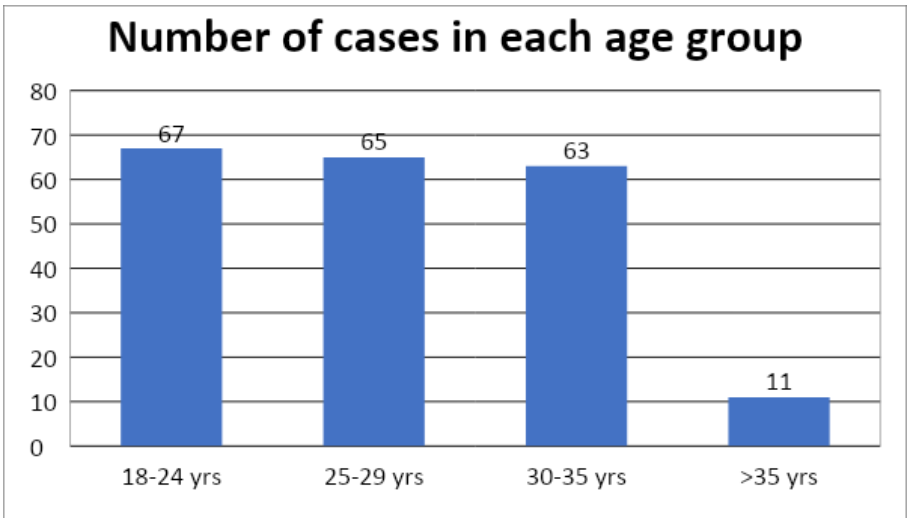
- unpublished reports,
- unspecified date of reporting,
- cases with suspected COVID-19 that were not confirmed by a laboratory test
- unreported maternal or perinatal outcomes.

Variables extracted and analysed included maternal age, gestational age at the time of admission, laboratory testing reports, symptoms, and associated comorbidities. Maternal, perinatal, neonatal outcome data was also recorded. Maternal to foetal transmission of the virus could not be ruled out in this study. Statistical analysis was done with SPSS, version 25.0.

Categorical variables have been expressed as the number of cases and percentages (%).

IV. Observation and Results

A total of 206 pregnant women were diagnosed to have Covid-19 infection in our study, and we noted the following observations:



Graph 1: Age-wise distribution of pregnant women with Covid-19 infection

In our study, it was observed that the majority of patients (32.5 %) women belonged to age group 18-24 yrs, whereas 31.5 % of women were in the age group of 25-29 years, followed by 30.5 % women in 30-35 yrs age group. Only 5 % of pregnant women with Covid-19 infection were above 35 years of age.

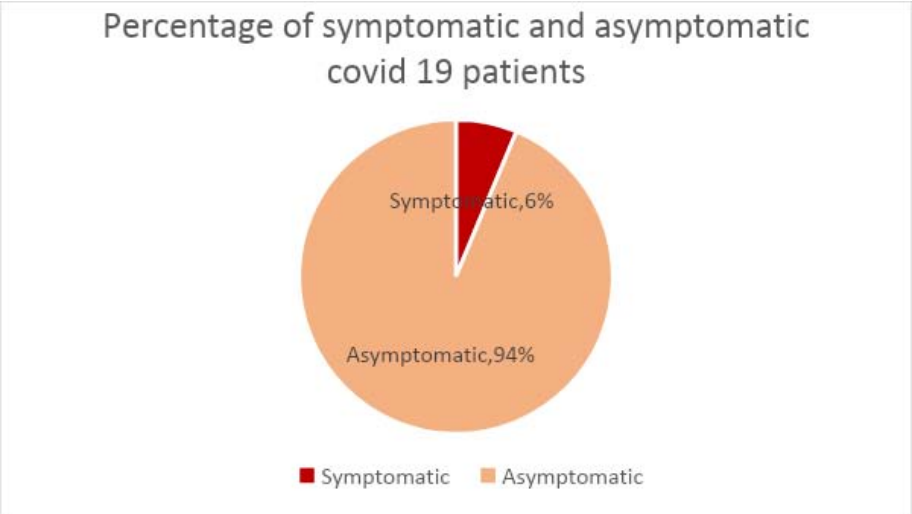


Diagram 2: Classifies Pregnant women with Covid-19 infection

In our study, it was observed that the majority of pregnant women (94%) diagnosed to have COVID- 19 infections remained asymptomatic pre-diagnosis and throughout hospital stay. Whereas only 6 % of women included in our study developed active symptoms of SARS-CoV 2.

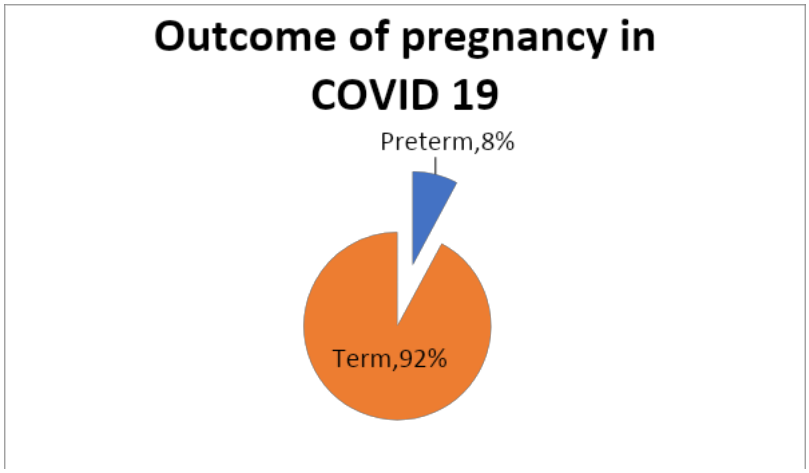


Diagram 3: Maternal outcome in terms of the period of delivery

In our study, the majority of the women who were diagnosed with COVID-19 infection delivered at term (92%) without intra-partum or post-partum complications. Only 8 % of women went into Preterm labor due to various reasons, none of which could be correlated directly with active infection with COVID -19.

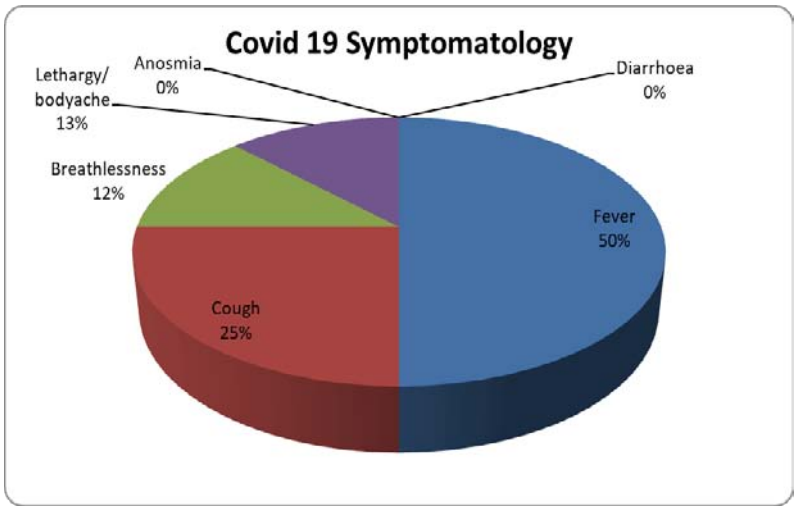


Diagram 4: Symptomatology in Covid-19 in Pregnancy

In our study, it was observed that pregnant women admitted to the hospital demonstrated various symptoms of active infection with the respiratory virus. Fever being the frequent symptom (50 %) of all symptomatic women followed by respiratory symptoms such as cough (25%), breathlessness on exertion or at rest (12%), and malaise (13%).

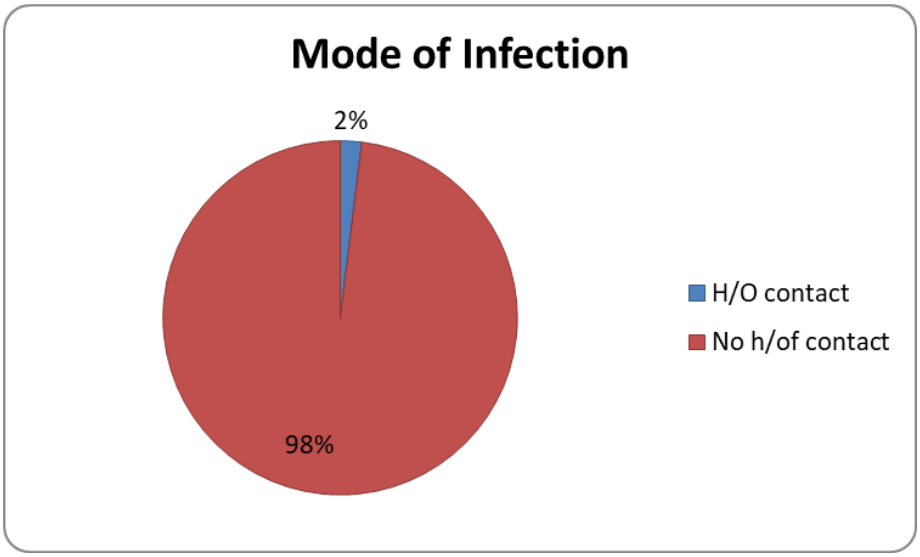


Diagram 5: Mode of Infection wise distribution of ANC patients

Out of all the pregnant women included in our study (206), only 2 % had a history of contact with a COVID positive patient or a COVID suspect or an HCW- Health Care Worker working in COVID care.

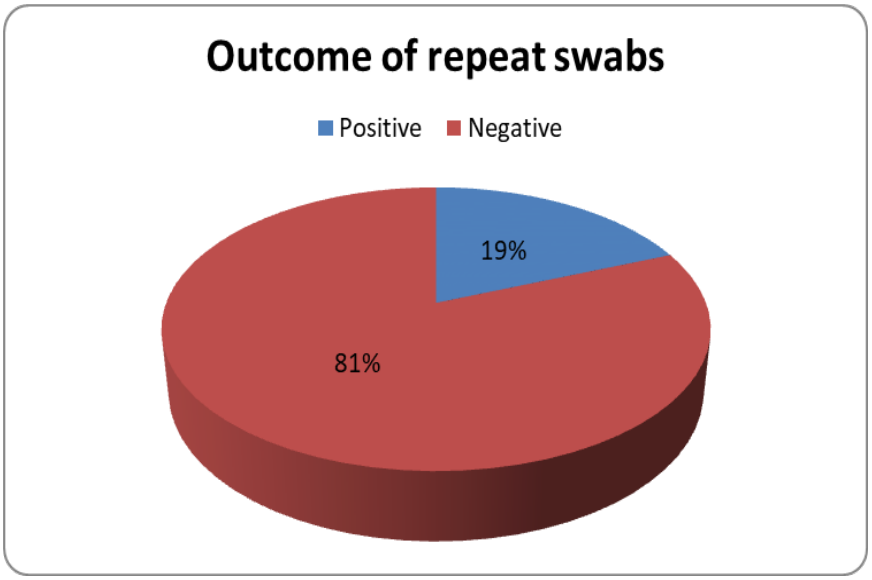


Diagram 6: Outcome of Repeat swabs wise distribution of patients

In our study majority of patients were discharged from the hospital after an average of 21 days stay without repeat swab testing. Of those whose swabs were repeated for the decision of further intervention (37), 81 % tested to be negative, whereas 19 % continued to remain positive.

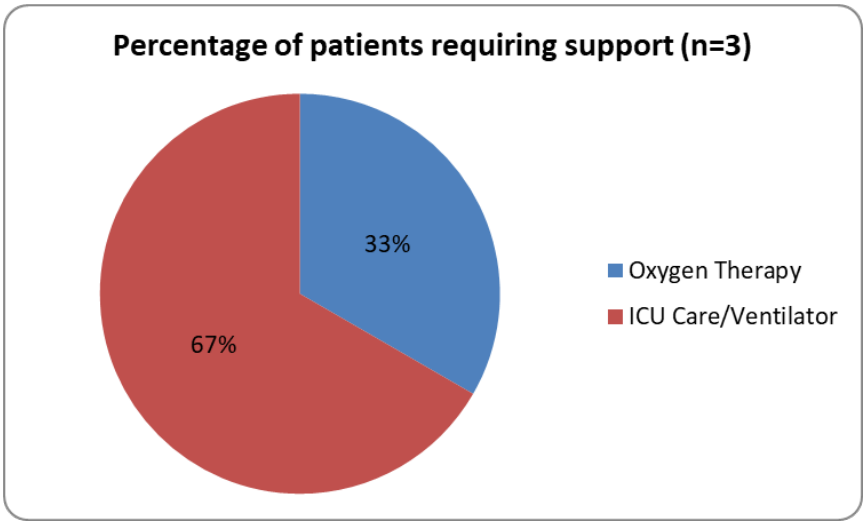


Diagram 7: Need of Intervention wise distribution of COVID-19 patients

In our study, 3 women (2%) needed to be transferred to COVID ICU post-admission, of which two patients (67%) (n=3) needed ventilatory support whereas one patient required only Oxygen supplementation (33%).

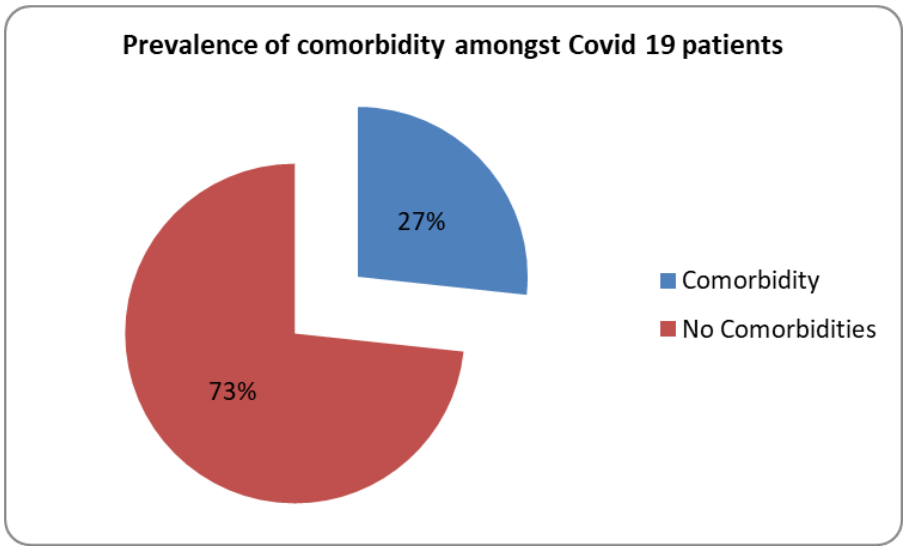
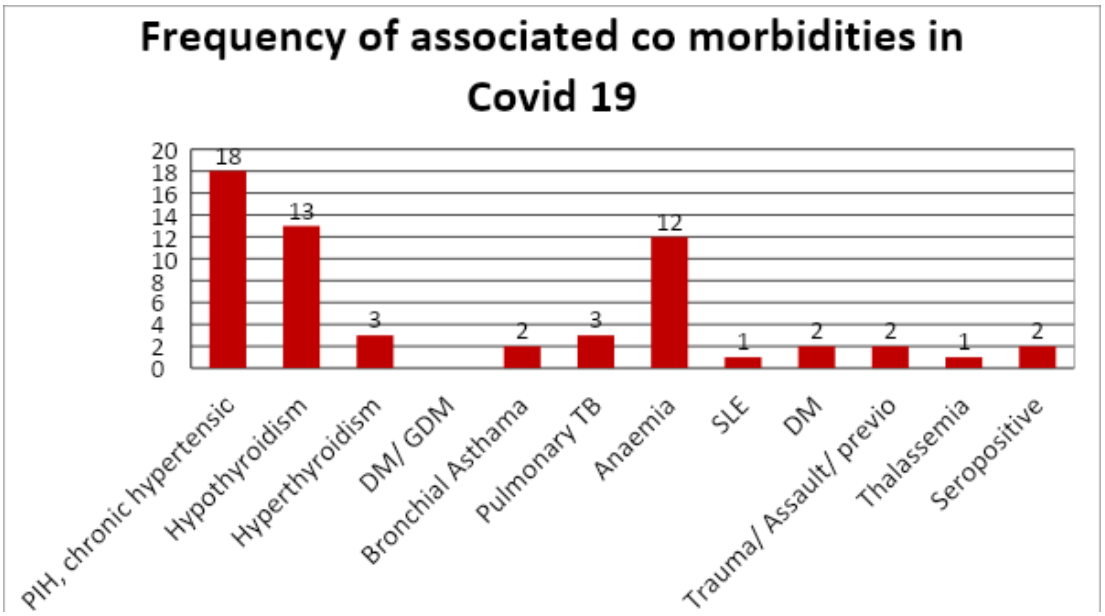


Diagram 8: Associated comorbidities wise classification of patients

In our study, 55 amongst the 206 admitted patients (27%) included in the study had pre-existing co-morbidities, many of whom had one more than one comorbidity. In contrast, the remaining 73% of the study subjects had no pre-existing comorbidity.



Graph 9: Distribution of associated Comorbidities in pregnant women with Covid-19.

Most common of which being Pregnancy Induced Hypertension or Chronic Hypertension (33%), Hypothyroidism (24%), Anaemia (22%). 2 women (3%) had a history of Bronchial Asthama, not on regular medication whereas three women (5 %) had a history of Pulmonary TB (AKT course completed).

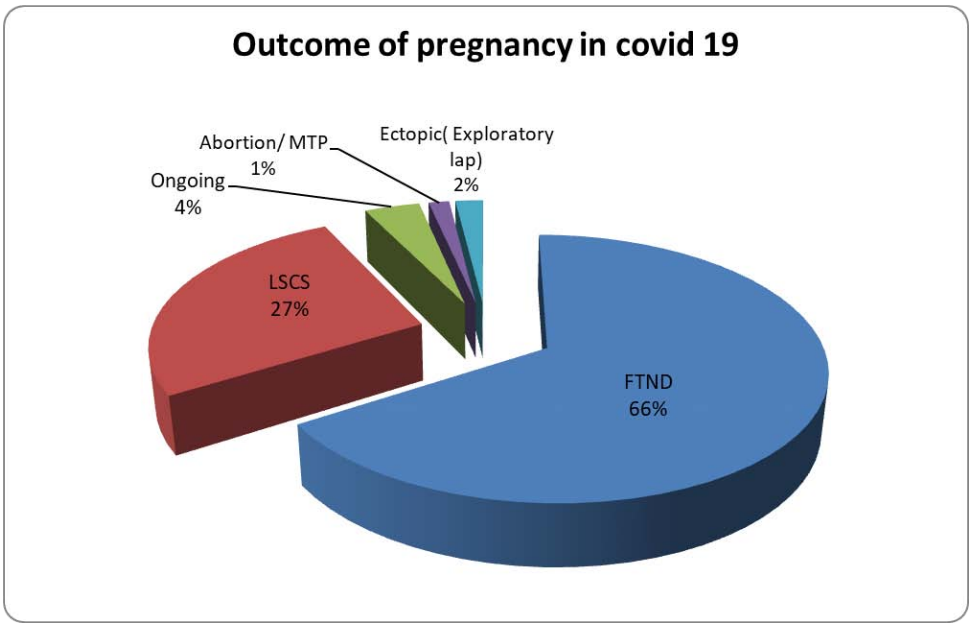


Diagram 10: Final Outcome of pregnancy

In our study, successful vaginal deliveries were conducted in 66% of the pregnancies, while 27 % delivered by emergency Cesarean section. 1% of the study subjects had a spontaneous abortion in early gestation, whereas 2 % had diagnosed Ectopic pregnancy on USG (ruptured/ unruptured) and underwent Exploratory Laparotomy with Salpingectomy.

V. Discussion

The first cases of COVID-19 pneumonia were reported in from Wuhan, Hubei Province in China in December 2019. Thereafter, the virus has rapidly spread all over the world[11][12] On March 11th, 2020, the World Health Organisation (WHO) classified the novel coronavirus disease (COVID-19), caused by the SARS-CoV-2 virus, as a global pandemic, highlighting the enormity of the viral outbreak [13]. Obstetricians around

the world began to identify cases of COVID-19 in pregnancy, but there is a paucity of literature on the same. This review summarizes the findings from 206 pregnancies confirmed to have COVID-19 infection. In the study that we conducted we found that COVID-19 during pregnancy may be associated with maternal morbidity and in severe cases mortality, but the possibility of maternal-fetal transmission could not be ruled out completely.

VI. Results

Mean maternal age ranged from 18 to 35 years of age. It was observed that women reported mostly in their late second or third trimester, which replicates the pattern seen for other respiratory viruses, with women in later pregnancy being more severely affected. This supports the current guidance for strict social distancing measures among pregnant women, particularly in their third trimester. In all, 4% of the pregnancies presented at earlier gestations, were all discharged, undelivered without any complications; however, due to lack of data on the perinatal outcomes, we cannot draw any conclusions about any perinatal or neonatal consequences of the infection if it is acquired early during the pregnancy.

About the mode of delivery, successful vaginal delivery was reported in the majority of cases (66 %). Cesarean section accounted for 27 % of cases. From an analysis of the available data, most cesarean births were for indications other than maternal compromise due to SARS-CoV-2 infection; fetal distress was commonly reported to as the indication for cesarean section. Birth before 37 completed weeks of gestation was not uncommon (reported cases, ~8 %). During our study period, postnatal management of infants born to mothers with confirmed or suspected SARS-CoV-2 infection included 'rooming in', i.e, to keep the mother and infant together and to encourage breast-feeding with consideration of using a surgical face mask for the mother. These findings emphasize the importance of infection control measures around during the perinatal period as well as support the advice given by WHO around precautions to be taken while breast feeding. [14] With regards to symptomatology, pregnant women infected with COVID-19 commonly presented with a fever at admission (50 %). A persistent, dry cough (25%) along with malaise (13%) and dyspnoea (12%) were less commonly described. Diarrhea and anosmia were not identified in any cases.

Pregnant women presented with several comorbidities or complications in their pregnancies, such as pre-eclampsia, eclampsia, gestational diabetes, hypothyroidism, hyperthyroidism, bronchial asthma, pulmonary TB, previous uterine surgeries, etc.

In the treatment provided to the pregnant women, we found that zinc supplementation, vitamin c supplementation were given to the majority of patients (200 of 206 available cases) Treatment with antibiotics was also generously prescribed (all cases), to prevent superimposed bacterial infection after an episiotomy or before and after a Caesarean section. However, we identified only 3 cases where oxygen was administered. Corticosteroid administration was given in all patients of threatened preterm (8%) for fetal lung maturation as opposed to relieving inflammation due to maternal pneumonia.

Further on, our review of 206 pregnant women with confirmed SARS-CoV-2 infection showed 3 cases of maternal intensive care admission (2 %) and no confirmed fatalities. The maternal ICU admissions during this time period involved pregnant women with a complicated medical history, which leads us to question whether COVID-19 increases the risk of severe morbidity in high-risk pregnancies.

Three neonatal deaths and four intrauterine fetal death were also reported. The available data could not give clear evidence for vertical transmission of COVID-19 from the mother to the fetus. From our study, we draw the following

VII. Conclusion

Although the majority of mothers were discharged without any major complications, maternal caregivers should be aware that as per current evidence COVID-19 positive pregnant women, may present with fewer symptoms than the general population and may have equivocal investigations for the disease. There are low rates of maternal morbidity and mortality, as well as ICU admissions associated with COVID-19. The study, however, suggests the possibility of an atypical pneumonia causing severe maternal morbidity requiring ICU admission in pregnancies with comorbidities. As per our study, there is no evidence to suggest that expedited delivery changes any maternal or neonatal outcomes, nor is COVID-19 a contraindication to vaginal delivery. Vertical transmission of the COVID-19 infection (mother to fetus) could not be ruled out in our study. Careful monitoring of pregnancies with COVID-19 and measures to prevent neonatal infection are warranted.

References Références Referencias

1. Khan S., Siddique R., Ali A., Xue M., Nabi G. Novel coronavirus, poor quarantine, and the risk of pandemic. J Hosp Infect. 2020 doi: 10.1016/j.jhin.2020.02.002.
2. Wang D., Hu B., Hu C., Zhu F., Liu X., Zhang J. Clinical characteristics of 138 hospitalized patients with 2019 novel coronavirus-infected pneumonia in Wuhan, China. JAMA. 2020 doi: 10.1001/jama.2020.1585.

3. Khan S., Nabi G., Han G., Siddique R., Lian S., Shi H. Novel coronavirus: how the things are in Wuhan. Clin Microbiol Infect. 2020; 26(4):399–400. doi: 10.1016/j.cmi.2020.02.005.
4. Wong SF, Chow KM, Leung TN, et al. Pregnancy and perinatal outcomes of women with severe acute respiratory syndrome. Am J Obstet Gynecol. 2004; 191: 292- 297.
5. Alfaraj SH, Al-Tawfiq JA, Memish ZA. Middle East respiratory syndrome coronavirus (MERS-CoV) infection during pregnancy: report of two cases and review of the literature. J Microbiol Immunol Infect. 2019; 52: 501- 503.6. Goodnight WH, Soper DE. Pneumonia in pregnancy. Crit Care Med. 2005; 33: S390-S397.
6. Nelson-Piercy C. Respiratory disease. In: Handbook of Obstetric Medicine. Boca Raton: CRC Press; 2015: 371 p.
7. O'Day MP. Cardio-respiratory physiological adaptation of pregnancy. Semin Perinatol. 1997; 21: 268- 275.
8. Liang H, Acharya G. Novel corona virus disease (COVID-19) in pregnancy: what clinical recommendations to follow? Acta Obstet Gynecol Scand. 2020; 99: 439-442.
9. Chen H., et al., Clinical characteristics and intrauterine vertical transmission potential of COVID-19 infection in nine pregnant women: a retrospective review of medical records. The Lancet, 2020. 395(10226): p. 809–815.
10. Huang C, Wang Y, Li X, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet*. 2020; 395: 497- 506.
11. World Health Organization. Novel Coronavirus–China. 2020. https://www.who.int/csr/don/12-january-2020-novel-coronavirus-china/en/. Accessed March 24, 2020.
12. WHO, Coronavirus disease Situation Report 85. 2020, World Health organisation.
13. Royal College of Obstetricians and Gynaecologists and the Royal College of Midwives. Coronavirus (covid-19) infection in pregnancy: information for healthcare professionals. Royal College of Obstetricians and Gynaecologists, 2020.

Abbreviations

1. ICU- intensive care unit
2. HCW- Health Care worker
3. qRT-PCR- quantitative real-time polymerase chain reaction
4. SARS-CoV-2- severe acute respiratory syndrome coronavirus-2

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Factors Associated with Knowledge Regarding Uterine Prolapse among Women Attending Gynecology Outpatient Department of Tertiary Care Teaching Hospital

By Nirmal Raj Marasine, Sabina Sankhi, Rajendra Lamichhane, Sonu Pakhrin, Sangit Maharjan, Saroj Sankhi, Nabin Raj Marasini & Sumitra Shrestha

Pokhara University and Western Health Science Academy

Abstract- *Background:* Uterine prolapse (UP) is a common reproductive health problem in low-mid-income countries such as Nepal. The current study aimed to explore the factors associated with knowledge regarding UP among women attending the gynecology outpatient department of tertiary care teaching hospital.

Methods: A cross-sectional study was conducted among patients visiting the gynecology outpatient department of tertiary care teaching hospital in Nepal from July to September, 2016 using a purposive sampling technique. A suitably designed and validated questionnaire of knowledge consisting of 20 questions was used to determine the knowledge scores. Descriptive statistics and bivariate analysis were used; a p-value <0.05 was taken as significant in multivariate analysis.

Keywords: *Associated factors, Gynecology, Knowledge, Tertiary care teaching hospital, Uterine prolapse, Women.*

GJMR-E Classification: *NLMC Code: WP 454*

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Factors Associated with Knowledge Regarding Uterine Prolapse among Women Attending Gynecology Outpatient Department of Tertiary Care Teaching Hospital

Nirmal Raj Marasine [α], Sabina Sankhi [σ], Rajendra Lamichhane [ρ], Sonu Pakhrin [ω], Sangit Maharjan [¥], Saroj Sankhi [§], Nabin Raj Marasini [χ] & Sumitra Shrestha [ν]

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Results: The majority of the study participants (40.76%) aged between 18-30 years, 48.46% were Brahmin, 91.53% were married, 46.15% had a primary level of education, and 83.07% resided in central Nepal. Seventy percent had heard about UP. More than half of the participants (75; 57.69%) had a satisfactory level of knowledge and 55 (42.30%) had a good level of knowledge of uterine prolapse. Age (p=0.014), education (p=0.008), occupation (p=0.03), and ethnic group (0.024) were found significantly associated with the level of knowledge among women.

Conclusion: Our study showed that the level of knowledge on UP among women of reproductive age group is satisfactory, and is attributed to factors such as age, education, occupation, and ethnic group.

Keywords: Associated factors, Gynecology, Knowledge, Tertiary care teaching hospital, Uterine prolapse, Women.

I. Introduction

Uterine prolapse (UP), a reproductive health problem, is characterized by obtrusion of the uterus partially or wholly into the vagina, which occurs when pelvic floor muscles and ligaments become weak and no longer can support the uterus [1]. It is the most often reported cause of poor health among women of reproductive age (15-49) and postmenopausal women (45-49 years) around the globe [2]. Its global prevalence ranges from 2-20%, whereas that in Nepal varies according to ecological zones such as 20 to 37% in the Terai (plain) region, 27.4% in the central and eastern hilly region, and 25% in the far western hilly region [3, 4]. Despite the fact that it is preventable and curable, it holds the major global burden of morbidity and mortality among women [5]. In Nepal, more than 1 million women suffer from uterine prolapse, and most belong to the reproductive age group [6]. Nepalese women have more workload than men, since the traditional gender division of labor encourages women to concentrate more on their reproductive role and household activities, wherein men are free to move to different places for work [4, 7]. Early marriage, high parity, heavy lifting during and after pregnancy, early return to work after parturition, older age at last birth, postmenopausal status, and lack of sufficient rest and nutritious food contribute to high rates of UP [8, 9]. More than 85% of Nepalese women reports vaginal lump, difficulty working, sitting, walking, urinary incontinence, vaginal discharge, loss of libido, and painful intercourse as common symptoms of UP [10]. UP affects many aspects of the quality of life of women, ranging from physical discomfort to psychological, social, and sexual lifestyle limitations. Supplementary to these, Nepalese women with UP faces family and societal discrimination, which further deteriorates their quality of life [3, 11].

Despite the high prevalence of UP in Nepal, it has not been addressed satisfactorily. Most women hide UP problems being conscious of the embarrassment, lack of family support, unsuccessful treatment, and high

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cost of treatment [12]. In Nepal, family planning services and maternal health care are providing regular services for public health promotion. Although various national, international, and non-governmental organizations have conducted specific awareness programs since 2005, to reduce the problem through outreach camps, health institutions, female community health volunteers, and mass media, a knowledge gap remains among women about UP [10, 13]. Even women who are aware of UP, its treatment, and access to healthcare often lag to seek it because of shyness of genital exposure, fear of abandonment by their husbands, and traditional beliefs that surgery will make them weaker [14]. It has been reported that 52.9% of Nepalese women are lacking knowledge on UP, and only 37.5% have thorough knowledge about this condition [2, 10]. A lack of appropriate and adequate knowledge regarding UP and its prevention often results in delayed care and safety measures [11]. The current study therefore aimed to explore the factors associated with knowledge regarding uterine prolapse among women attending the gynecology outpatient department of Chitwan Medical College Teaching Hospital. Our study is timely and relevant, and the findings will be helpful for understanding symptoms and knowledge among women with UP. Moreover, it will aid in the development of evidence-based health promotion programs for the prevention of UP in its early stage among the general population of women in Nepal.

II. Methodology

a) Ethics

Ethical approval of this study was obtained from the Chitwan Medical College- Institutional Review Committee (CMC-IRC) (Ref no: CMC-IRC-43) and written informed consent was obtained from each participant. Additionally, the study protocol presented no risk or harm to the participants and the method of consenting was approved by the IRC. Personal details of the participant were kept confidential, and anonymity was maintained.

b) Design

This was a hospital-based cross-sectional study.

c) Population

Participants aged ≥18 years visiting the gynaecology outpatient department of Chitwan Medical College (Chitwan, Nepal) between July and September 2016 were included in the study. Pregnant or lactating mothers, participants with a psychiatric disorder, from other departments, and those unable to communicate and understand the Nepali language were excluded.

d) Sample size

A sample size of 130 was taken to study the factors associated with knowledge regarding UP using a purposive sampling method.

e) Data collection

The data on pre-existing knowledge of 130 participants were collected using a pre-validated questionnaire [2] through an interview method. A standard data collection form was built for collecting data on sociodemographic information. There were 20 questions for assessing knowledge. The English form of the questionnaire was translated into Nepali and pilot tested on 10% of the sample size of a similar setting who met our inclusion and exclusion criteria, and the reliability using Cronbach's alpha test was $\alpha=0.8$. Participants involved in the pilot were not included in the main study. Answer for each question regarding knowledge on UP was scored one for correct and zero for incorrect.

f) Statistical analysis

Data were entered in MS Excel 2013. The entered data were transferred to SPSS version 20 for further analysis. Univariate, bivariate, and multivariate analyses were performed. Bivariate analysis of independent variables with the dependent/outcome variable was performed by cross-tabulation and testing with Pearson Chi-square. Variables found significant in the bivariate analysis were included in a multivariate analysis and fitted using binary logistic regression (enter method) with knowledge as outcome variable. A measure of association was presented as an odds ratio (OR) with a 95.0% confidence interval (CI). $P<0.05$ was considered statistically significant.

III. Results

Table 1: Sociodemographic characteristics of participants (n=130)

Characteristics	Categories	n (%)
Age	18-30 years	53 (40.76)
	31-40 years	42 (32.30)
	41-50 years	29 (26.92)
Marital Status	Married	119 (91.53)
	Divorced	5 (3.84)
	Widowed	6 (4.61)
Education	Illiterate	24 (18.46)
	Primary Level	60 (46.15)
	Secondary Level	27 (20.76)

	Higher secondary or above	19 (14.61)
Ethnic Group	Brahmin	63 (48.46)
	Chhetri	19 (14.61)
	Janajati	13 (10.0)
	Dalit	35 (26.92)
Development Region	Eastern	4 (3.07)
	Central	108 (83.07)
	Western	18 (13.84)
Occupation	Housewife	97 (74.61)
	Agriculture	49 (37.69)
	Business	11 (8.4)
	Service	16 (12.3)
Monthly Income	< Rs.10,000	23 (17.7)
	< Rs.25,000	59 (45.38)
	>Rs 25,000	21 (16.2)
	≥50,000	27 (20.8)
Source of Information on UP*	Mass Media	84 (66.92)
	Friends/ Relatives	48 (36.92)
	FCHVs	34 (26.15)
	Health Workers	30 (23.07)
Heard of UP	Yes	92 (70.76)
	No	38 (29.23)

**Multiple response*

Abbreviation; UP: Uterine Prolapse, FCHVs: female community health volunteers

Among the 130 subjects, the majority of the study participants (53; 40.76%) aged between18-30 years, where most of them (63; 48.46%) were Brahmin. The study participants were predominantly married (119; 91.53%) and majority of them (60; 46.15%) had a primary level of education. Most of the participants (108; 83.07%) resided in central Nepal. Housewife (97; 74.61%) was the most frequently reported occupation. Most of the participants (59; 45.38%) had monthly income less than Rs 2500. The majority of the participants (66.92%) reported mass media as the main source of information, followed by friends/relatives (36.92%) and FCHVs (26.15%). Seventy percent of the participants reported that they had heard of UP, as depicted in Table 1.

Table 2: Knowledge on Symptoms, Preventive Measures, and Risk Factors of Uterine Prolapse (n=130)

Characteristics	Categories	n (%)
Symptoms*	Difficulty in lifting loads	125 (96.15)
	Lower abdominal pain	101 (77.69)
	Sagging uterus	98 (75.38)
	Pain during sexual activity	92 (70.76)
	Difficulty controlling urine	90 (69.23)
	Odorous discharge	85 (65.38)
Preventive measures*	Not lifting heavy loads during Postnatal period	130 (100)
	Eating nutritious food during pregnancy	125 (96.15)
	Taking adequate rest during postnatal period	126 (96.92)
	Practising family planning and birth spacing	122 (93.84)
	Avoid early pregnancy	118 (90.76)
	Use of institutional delivery	116 (89.23)
	Use of safe abortion services	115 (88.46)
Risk factor*	Many vaginal deliveries	128 (98.46)
	Adolescent pregnancy	127 (97.69)
	Obesity	111 (85.38)
	Increasing age	100 (76.92)
	Malnutrition	95 (73.07)
	Chronic constipation	85 (65.38)
	Prior pelvic surgery	80 (61.53)

**Multiple response*

The majority of the participants (129; 96.15%) reported that difficulty in lifting heavy loads as the main symptom of UP, followed by lower abdominal pain (101; 77.69%), sagging uterus (98; 75.38%), and odorous discharge (85; 65.38%). All participants reported that not lifting heavy loads during the postnatal period, the best method for the prevention of UP, followed by eating nutritious food during pregnancy (125; 96.15%), taking

adequate rest during the postnatal period (122; 93.84%), and using safe abortion services (115; 88.46%). Almost all participants (128; 98.46%) reported that having many vaginal deliveries were risk factors for UP, followed by adolescent pregnancy (127; 97.69%), obesity (111; 85.38%), prior pelvic surgery (80; 61.53%), as shown in Table 2.

Table 3: Level of knowledge on UP

Characteristics	Categories	n (%)
Level of Knowledge	Good (≥ 75%)	55 (42.30)
	Satisfactory (50 to < 75%)	75 (57.69)

More than half of the participants (75; 57.69%) had a satisfactory level of knowledge, and 55 (42.30%) had a good level of knowledge on uterine prolapse, while none of them exhibited a poor level of knowledge, as illustrated in Table 3.

Table 4: Factors associated with level of knowledge

Characteristics	Level of Knowledge		odd ratio	95%CI	P-value
	Good	Satisfactory			
Age					
< 40	40	55	0.96	0.55-1.68	0.014*
≥ 40	15	20	1		
Education					
Literate	47	59	1.59	0.78-2.89	0.008*
Illiterate	8	16	1		
Occupation					
Employed	16	11	2.38	1.34-4.25	0.03*
Unemployed	39	64	1		
Ethnic Group					
Advantage	43	39	3.30	1.31-4.22	0.024*
Disadvantage	12	36	1		
Heard of UP					
Yes	45	47	2.60	1.11-3.92	0.017*
No	10	28	1		

Bivariate analysis of the outcome variable was performed with other independent variables. Knowledge scores were used to categorize respondents into a binary variable good and satisfactory. The association was considered significant if the "P" value was less than 0.05. Bivariate analysis of all variables was performed. However, only five independent variables were found to be significantly associated with level of knowledge, which is listed here. Women aged <40 years were found 0.96 times more likely to have a good level of knowledge than women who aged ≥40 years. Literate women were found 1.59 times more likely to have a good level of knowledge than illiterate women and advantaged women were found 3.3 times more likely to have a good level of knowledge than disadvantaged women. Similarly, employed women were found 2.86 times more likely to have a good level of knowledge than unemployed women. Likewise, women who had heard about UP were found 2.6 times more likely to have a good level of knowledge than those who had notheard about UP, as shown in Table 4.

IV. Discussion

The current status of knowledge on UP among women of reproductive age (18 to 50) visiting gynecology OPD of the tertiary care hospital in central Nepal was explored over a period of 3 months among 130 participants. Most of the participants had a primary level of education and were from the central region of the country. Our study showed that 70% of the participants had heard about UP, and more than half of the participants had satisfactory knowledge. The knowledge in our study population contradicts that of study population of a large-scale study conducted in 25 districts of Nepal and Egypt [2, 15].

Our study showed that mass media were the common source of information for gaining knowledge about uterine prolapse, which is consistent with that of other studies [2, 16]. This is because, mass media like radio and television are easily accessible tool and are commonly available in the house of people of every socioeconomic background. Our study showed that age, education, ethnic group, and occupation are significantly associated with the level of knowledge

about uterine prolapse in women. The 2011 Nepal Demography and Health Survey (NDHS 2011) demonstrated that the class, caste/ethnic group, and education are significantly associated with overall health knowledge and reproductive health care–seeking practices [17]. School, magazines, and female community health workers are the major source for obtaining information on health related matters in low economic country like Nepal. However, it is reported that these source do not provide enough information regarding risk factors for uterine prolapse [18]. Subject course in school do not cover adequate information on sexual and reproductive health, which in fact is the most important learning for life time. Additionally, teachers in Nepal feel embarrassed to discuss about it and its prevention. Magazines do not cover the sensitive health problem like uterine prolapse which is the major female health issue in Nepal. Due to this women cannot have enough knowledge on the prevention of uterine prolapse and when it actually happens they hesitate to open up and hide it within themselves thinking everyone will judge them and they will be stigmatized. Thus, inadequate formal education on sexual and reproductive health, lack of focus on prevention of uterine prolapse in community health programs for women might be the reason for current variation seen in the satisfactory level of knowledge about uterine prolapse among female teenagers and other age groups. Similarly, low education level is the major barrier in the ability to utilize available health care service optimally, and this is usually a strong barrier to the use of antenatal and skilled birth services in women in Nepal [18]. Educated women are involved in many health organization which focus on female health as their major project. During their working duration they got to attend seminars and trainings related to uterine prolapse and other female problems, which directly or indirectly contributes in increasing the knowledge level among women. This might be the reason for high level of knowledge being associated with education and employment status found in our study. Moreover, our study showed the significant association between the knowledge level and ethnic group which is consistent with the large scale study conducted in 25 districts of Nepal [2].

The limitation of this study is that: this was a single-centered study conducted in a single hospital of central Nepal and in a relatively small sample size. Therefore, the generalizability of the findings remains to be explored.

V. Conclusion

Our study showed that the level of knowledge on uterine prolapse among women of reproductive age group is satisfactory, and is attributed to their age, education, occupation, and ethnic group. The findings highlight the need for implementation of uterine prolapse related health promotion programs to target women of all caste/ethnic groups, age groups, and education status nationwide.

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References

1. Bijalwan RP, Bhagavatula M, Semwal VD, Rawat P, Anand V. Morbidity of uterine prolapsed among the women in the chakrata block of Dehradun District. Indian J Community Health 2015; 27: 103-9.
2. Shrestha B, Devkota B, Khadka BB, Choulagai B, Pahari DP, Onta S, Petzold M, Krettek A. Knowledge on uterine prolapse among married women of reproductive age in Nepal. Int J Women's Health 2014; 6:771.
3. Dhital R, Otsuka K, Poudel KC, Yasuoka J, Dangal G, Jimba M. Improved quality of life after surgery for pelvic organ prolapse in Nepalese women. BMC Womens Health 2013; 13:22. https://doi.org/10.1186/1472-6874-13-22.
4. Shrestha B, Onta S, Choulagai B, Poudyal A, Pahari DP, Uprety A, et al. Women's experiences and health care-seeking practices in relation to uterine prolapse in a hill district of Nepal. BMC Womens Health 2014; 14:20.
5. Khadgi J, Poudel A. Uterine prolapse: a hidden tragedy of women in rural Nepal. IntUrogynecol J 2018; 29(11):1575-8.
6. Bodner-Adler B, Shrivastava C, Bodner K. Risk factors for uterine prolapse in Nepal. IntUrogynecol J 2007; 18:1343–6.
7. Earth B, Sthapit S. Uterine prolapse in rural Nepal: gender and human rights implications. A mandate for development. Cult Health Sex 2002; 4:281-96.
8. Bonetti TR, Erpelding A, Pathak LR. Listening to "felt need": investigating genital prolapse in western Nepal. Reprod Health Matters 2004; 12(23):166-175
9. Fitchett JR, Bhatta S, Sherpa TY, Malla BS, A Fitchett EJ, Samen A, Kristensen S. Non-surgical interventions for pelvic organ prolapse in rural Nepal: a prospective monitoring and evaluation study. JRSM open 2015; 6(12):2054270415608117.
10. Shrestha B, Choulagai B, Onta S, Shrestha KB, Petzold M, Krettek A. Knowledge, prevalence and treatment practices of uterine prolapse among women of reproductive age in the Jhaukhel-Duwakot Health Demographic Surveillance Site, Bhaktapur, Nepal. JKMC2014; 3(4):136-43.
11. Radl CM, Rajwar R, Aro AR. Uterine prolapse prevention in Eastern Nepal: the perspectives of women and health care professionals. Int J Women's Health2012; 4:373.

12. Sharma SK, Sawangdee Y, Sirirassamee B. Access to health: women's status and utilization of maternal health services in Nepal. J BiosocSci2007; 39(5):671-92.
13. Bodner-Adler B, Shrivastava C, Bodner K. Risk factors for uterine prolapse in Nepal. IntUrogynecol J2007; 18(11):1343-6.
14. Subedi M. Uterine prolapse, mobile camp approach and body politics in Nepal. DJSA 2010; 4:21-40.
15. Goman HM, Fetohy EM, Nosseir SA, Kholeif AE. Perception of genital prolapse: a hospital-based study in Alexandria (Part II). J Egypt Public Health Assoc2001; 76(5-6):337-56.
16. Elsayed F, Ahmed M, Gaheen MA. Knowledge and Practices of women regarding risk factors of uterine prolapse. IOSR Journal of Nursing and Health Science (IOSR-JNHS) 2016; 5(6):60-7.
17. Bennett L. Gender Caste and Ethnic exclusion in Nepal: following the policy process from analysis to action. In: Arusha Conference, "New Frontiers of Social Policy" World Bank ESSD Network, Arusha, December 12–15, 2005; Tanzania. Available from: http://www.k4health.org/sites/default/files/Gender,%20caste%20and%20ethnic%20exclusion%20in%20Nepal.pdf. Accessed September 12, 2020.
18. Amnesty International UK. Nepal: Unnecessary Burden: Gender Discrimination and Uterine Prolapse in Nepal. ASA 31/001/2014. London: Amnesty international Ltd, Peter Benenson House; 2014. Available from: http://www.amnesty.org/en/library/info/ASA31/001/2014/en. Accessed September 12, 2020.

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A Case of Transient Cortical Blindness in Posterior Reversible Encephalopathy Syndrome in the Late Postpartum Period

By Dr. Krishna. K. Nair, Dr. Jayanthi. R & Dr. Sahitya Meda

Introduction- Posterior reversible encephalopathy syndrome (PRES) is a reversible neurological entity characterized by seizure, headaches, visual symptoms, impaired consciousness and other focal neurological findings.

It is caused by a wide variety of causes ultimately leading to vasogenic cerebral oedema of occipital and parietal lobes of the brain.

The pathophysiology is failure of cerebral autoregulationand endothelial dysfunction.

GJMR-E Classification: *NLMC Code: QS 675*

Strictly as per the compliance and regulations of:

A Case of Transient Cortical Blindness in Posterior Reversible Encephalopathy Syndrome in the Late Postpartum Period

Dr. Krishna. K. Nair [α], Dr. Jayanthi. R [σ] & Dr. Sahitya Meda [ρ]

I. Introduction

Posterior reversible encephalopathy syndrome (PRES) is a reversible neurological entity characterized by seizure, headaches, visual symptoms, impaired consciousness and other focal neurological findings.

It is caused by a wide variety of causes ultimately leading to vasogenic cerebral oedema of occipital and parietal lobes of the brain.

The pathophysiology is failure of cerebral autoregulationand endothelial dysfunction.

II. Case Presentation

A 33 years old women, Para-2,Live-2,post elective LSCS on POD 10,with no prior co-morbities, presented with the history of abrupt onset of blurring of vision since last 5 hours, which was progressive and developed transient loss of vision within 2 hours from the onset of the symptoms.

It was associated with deviation of angle of mouth to the right side and mild headache. No h/o loss of consciousness, seizure episode, voimiting, weakness in the upper or lower limbs or trauma. she has an otherwise uneventful pregnancy. No H/O gestational hypertension. No significant family history.

Intraoperative and postoperative period was uneventful. no H/O undue bleeding in the postpartum period. She was breastfeeding her newborn.

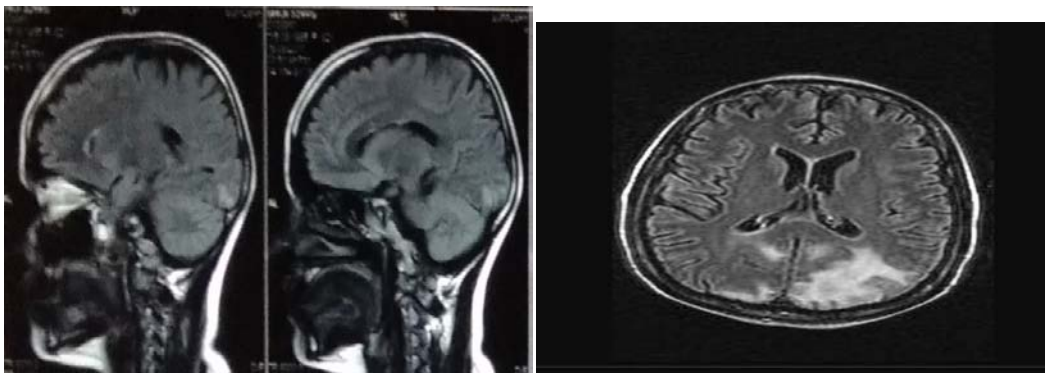
On examination: patient was conscious, alert and oriented. she was found to have elevated BP-180/100mmhg.Rest of the vital signs were within normal limits. Systemic examination was done no abnormalities were detected.

Power was 5/5 in all 4 limbs. sensory function was intact .cranial nerve examination was unremarkable. cerebral signs were intact. no signs of neck rigidity. plantars were B/L flexors.

On ocular examination, visual acuity of both the eyes were 1/60 with bilateral pupils reacting well to the light with normal fundus.

Investigations: Laboratory findings were –Hb-11.6gm%, TLC-11500cmm, Platelet count-2.75 lakhs/cmm; No proteinuria; PT, APTT, INR –within normal limits. LFT,RFT-were within normal limits.

MRI –Bilateral occipital lobe hyperdensities noted in the T2 Flair images, consistent with posterior reversible encephalopathy syndrome (PRES).



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Differential Diagnosis:

1. Ischemic stroke
2. cerebral haemorrhage
3. cerebralvenous thrombosis,
4. Posterior reversible encephalopathy syndrome (PRES)
5. Hypertensive emergency with retinal haemorrhage.

Treatment: The patient was transferred to the intensive care unit. LABETALOL infusion was started at a rate of 1mg/min with close monitoring of blood pressure. Patient's symptoms gradually resolved and her vision improved to 6/6 after 8 hours.

Her Blood pressure was maintained at 130/80mmhg and Labetalol infusion was stopped and was started on Tab. Amlodipine 5 mg 12th hourly.

Patient continued to improve clinically and was discharged on 5th day of hospitalization. She was prescribed Tab. Amlodipine 2.5mg BD.

III. Discussion

Posterior reversible encephalopathy syndrome (PRES) was first described by Hinchey et al. in 1996.

It is a reversible neurological entity characterized by the presence of white matter oedema affecting the occipital and parietal lobes. It can occur at any age and most commonly affects female.

A variety of clinical conditions are associated with the development of PRES, which include hypertensive emergency, renal disease, pre-eclampsia/ eclampsia, immunosuppressive agents, sepsis, auto immune disease.

MRI is the imaging modality of choice. Diffusion-weighted MRI helps to distinguish the Vasogenic oedema from cytotoxic oedema. Permanent neurological impairment or death occurs only in a minority of patients. Recurrence of symptoms has been observed in 8% of the cases.

IV. Conclusion

As indicated by its name, appropriate treatment is expected to ensure a full recovery. MRI of the brain is crucial to make the diagnosis.

The management of PRES involves early diagnosis, treatment of the symptomatology and correction of the causative factor.

References Références Referencias

1. Hinchey J, Chaves C, Appignani B, et al. A reversible posterior leukoencephalopathy syndrome. N Engl J Med 1996; 334:494–500.
2. Legriel S, Pico F, Azoulay E. Understanding posterior reversible encephalopathy syndrome. Annual update in intensive care and emergency medicine 2011. Springer, 2011:631–53.
3. Servillo G, Bifulco F, De Robertis E, et al. Posterior reversible encephalopathy syndrome in intensive care medicine. Intensive Care Med 2007; 33:230–6.
4. Roth C, Ferbert A. Posterior reversible encephalopathy syndrome: long-term follow-up. J Neurol Neurosurg Psychiatry 2010; 81:773–7.
5. Felz MW, Barnes DB, Figueroa RE. Late postpartum eclampsia 16 days after delivery: case report with clinical, radiologic, and pathophysiologic correlations. J Am Board Fam Pract 2000; 13:39–46.
6. Ekawa Y, Shiota M, Tobiume T, et al. Reversible posterior leukoencephalopathy syndrome accompanying eclampsia: correct diagnosis using preoperative MRI. TohokuJ Exp Med 2012; 226: 55–8.
7. Dominguez-Fuentes B, Garcia-Gil D, Romero-Palacios A, et al. [Posterior reversible leukoencephalopathy in a patient with postpartum eclampsia]. Medicina Intensiva 2008; 32:361–3.
8. Garg RK. Posterior leukoencephalopathy syndrome. Postgrad Med J 2001; 77:24–8.
9. Chiou YH, Chen PH. Reversible posterior encephalopathy syndrome as the presentation of late postpartum eclampsia: a case report. Acta Neurol Taiwan 2007; 16:158–62.
10. Chhabra S, Tyagi S, Bhavani M, et al. Late postpartum eclampsia. J Obstet Gynaecol 2012; 32:264–6.

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Fetomaternal Outcome in Pregnancy with Hepatitis E Infection

By Dr. Sampada

Abstract- *Background:* HEV infection, a major public health concern, is known to cause large-scale epidemic and sporadic cases of acute viral hepatitis in developing countries. The infection occurs primarily in young adults and is generally mild and self-limiting; however, the case fatality rate is reportedly higher among pregnant women.

Methods: Our study, a retrospective observational study, was conducted in a tertiary care centre for over a period of 3 years (Jan 2017 to Jan 2020) to find out the fetal and maternal outcome in pregnant women with HEV infection.

Results: A total of 38antenatal cases with Anti-HEV IgM-positive were included, and the maternal-fetal outcome was analyzed. The maternal mortality was 52.63% especially during 3rd trimester and post-partum period, including 5 antenatal death. The most common maternal complication was acute fulminant hepatitis (39.5 %), DIC (36.8 %) and hepatic encephalopathy (31.6%). Prematurity (33.3% of total live births) and Still births (32.3 %) including4fresh still births were the commonest fetal complications noted.

Keywords: *Hepatitis E, pregnancy, fulminant hepatic failure, maternal mortality, still births, hepatic encephalopathy, coagulopathy.*

GJMR-E Classification: *NLMC Code: QW 170*

Strictly as per the compliance and regulations of:

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Conclusion: Our study shows that pregnant woman with acute viral hepatitis due to hepatitis E virus infection had a high mortality rate especially during 3rd trimester and post-partum period with poor obstetric and fetal outcome.

Keywords: Hepatitis E, pregnancy, fulminant hepatic failure, maternal mortality, still births, hepatic encephalopathy, coagulopathy.

I. Introduction

Hepatitis E virus is a major cause of hepatitis and death in developing world and disproportionate cause of deaths among pregnant women[1].It is a non-enveloped, single-stranded RNA virus and is only virus within the genus Hepevirus and family hepaviridae[2]. HEV infectionis primarily transmitted through the feco-oral route[3]. The infection primarily occurs in young adults and is generally mild and self-limiting; however, the mortality rate is higher among pregnant women.[4] The nutritional, immunological and genetic factors play role in pathophysiology of fulminant HEV during pregnancy in developing countries[5]. Diminished cellular immunity (lowered CD4/CD8 cell ratio) and a high level of steroid hormones that influence viral replication during pregnancy appear to be the plausible reasons for severity of the disease[6].

The incidence and severity during pregnancy vary widely around the world. The case fatality rate is 1–2 % in outbreaks of waterborne Hepatitis E in India and Asia, which increases up to 10–20 % in pregnant women[7]. Reason for the difference in the outcome of HEV in different geographical areas remains unclear[8] but could be due to early childhood HEV exposures, producing long-lasting immunity and/or modifying subsequent responses to exposure to the virus. HEV is known to have five genotypes, four of which have been detected in humans; genotypes 1 and 2 are more virulent, genotypes 3 and 4 are more attenuated and accountable for subclinical infections[9].

This disease presents a challenging situation to the obstetrician because of the complications such as postpartum haemorrhage (PPH), preterm labour, preterm premature rupture of membrane (PPROM), maternal coagulopathy, acute fulminant liver failure, spontaneous abortion and intrauterine fetal death (IUFD).

II. Methods & Materials

A retrospective observational study was conducted at a tertiary care centre for over a period of 3 years (Jan 2017 to Jan 2020) to analyse the fetal and maternal outcome in all antenatal patients with Anti-HEV IgM-positive.

Inclusion criteria:

1. All antenatal patients with Anti-HEV IgM-positive.

Exclusion criteria:

2. Patients with Anti-HEV IgM-positive who lost follow up.

III. Observations

Age and parity distribution

Age	Parity		Gestational Age		
	primi	Multi	1st tri	2nd tri	3rd tri
20-25	10	12	-	7	15
26-30	4	10	-	6	8
30-40	1	1	-	-	2

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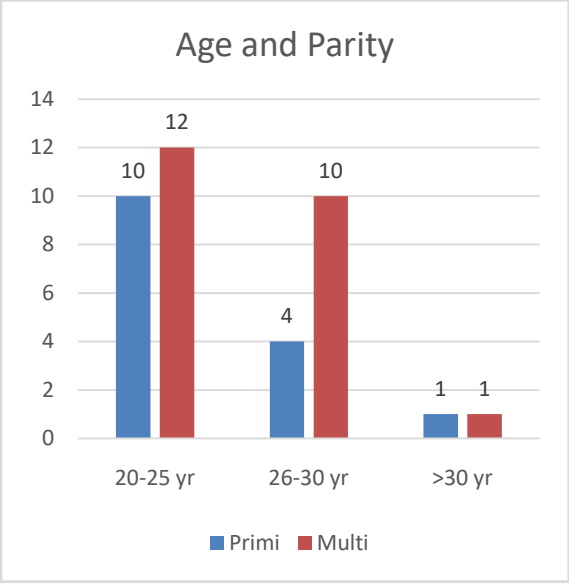
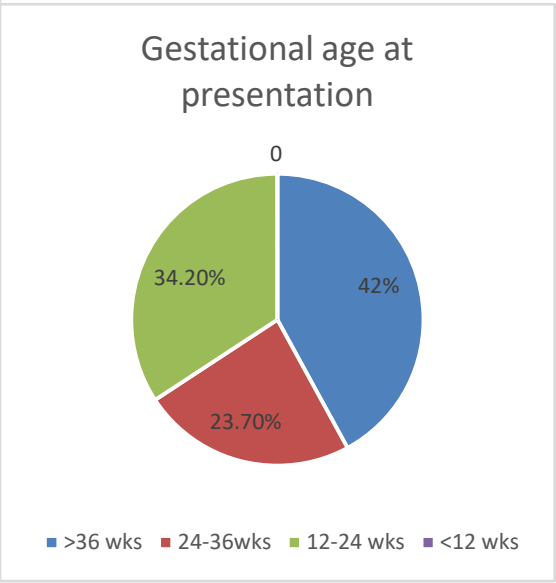




57.9 % belong to the age group 20-25 years followed by 36.8 % belong to 26-30 years and the minimum 5.3% belong to >30 years.

In our study maximum patients belong to third trimester, 42 % presented at > 36 weeks of gestation and 23.7 % between 24-36 weeks and 34.2 % in 12-24 weeks. No patient was found in the first trimester.

Lab parameters	Highest	Lowest	Median	Mean
Hb	13.8	4.6	-	9.09
Total leucocyte count	54000	2500	-	19680
Platelet	5.57 lac	21000	-	1.81 lac
Bilirubin	28	0.5	18.7	25.7
SGOT	4406	29	-	713
SGPT	3491	14	-	507
Prothrombin Time	70	11.3	39.3	27.48
INR	8.78	0.79	2.12	2.68
Creatinine	-	4.4	-	-

Presenting complaint

Most common presenting complaint was yellow discoloration of sclera and dark coloured urine, seen in 89 % cases followed by fever and then nausea, vomiting, altered sensorium.

Fever	9
Nausea, vomiting	6
Lethargy	2
Loss of consciousness	2
Altered sensorium	6
Pruritus	4
Convulsions	1
Jaundice	34
Breathlessness	2
Obstetrics reasons(PROM, PT labour, decreased fetal movement)	4+5+2

Some degree of anemia was seen in 74 % cases.

Total cases with Anaemia	Mild(8-10.9)	Moderate(5-7.9)	Severe(<5)
28 (74 %)	10	16	2

Associated thrombocytopenia (platelet count ranging between 21000 to 101000) was seen among 13 (34 %) patients with 4 having severe thrombocytopenia (< 50000).

IV. Data and Statistical Analysis

Computer based data analysis was done. Data entry sheet was designed and statistical analyses were

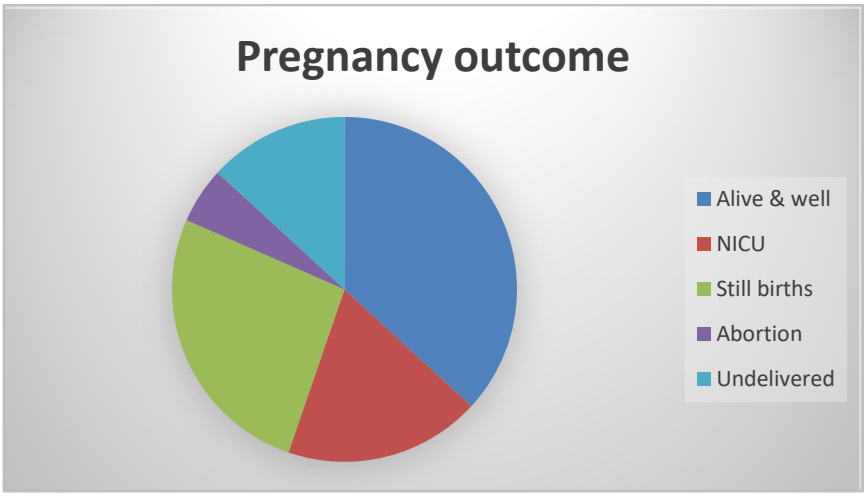
performed by using statistical package for the social sciences software version 16.0 (Chicago IL, USA). Variables considered are age, gestational age at presentation, parity, fetal and maternal outcome.

Quantitative variables e.g. age, gestational age, laboratory parameters were analysed using simple descriptive statistics like mean, median. Qualitative variables e.g. fetal and maternal outcome were calculated using frequency and percentage.

V. Results

a) Pregnancy outcome

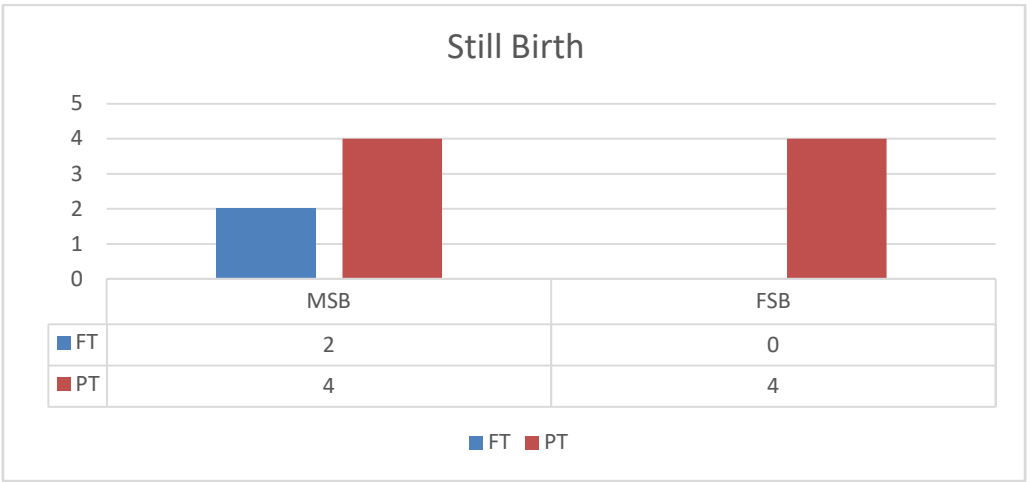
Alive & well	14 (45.16%)
NICU	07 (22.58%)
Still births	10 (32.25%)
Total delivered	31 (100%)
Undelivered	5/38 (13.15%)
Abortion	2/38 (5.26 %)



1. 76 % had low birth weight including 2 very low birth weight.

Total live birth	>/=2.5kg	>1.5kg to <2.5kg(LBW)	</=1.5KG(VLBW)	<1KG(ELBW)
21	5	14	2	0

2. 33% of total live borns were admitted to NICU, reasons being prematurity, very low birth weight and respiratory distress.
3. Still birth rate was 32.4% including 4 fresh still birth.



4. 1 patient had spontaneous abortion at 18 weeks and 1 patient underwent emergency check curettage in view of missed abortion at 16weeks.

b) Mode of delivery

Induction of labour was done in 14 cases by intracervical foleys catheter insertion. Reason for IOL were IUFD, PROM, patients with acute fulminant hepatitis with 37 completed weeks of gestation.

Most of the patients delivered vaginally 25/38 i.e 65.8%. 1 patient required instruemental delivery due to maternal exhaustion in 2nd stage of labour.

There were 6 patients who required lower segment c- section which makes 15.8 %. The indication were meconium stained liquor -1, previous LSCS with PROM -1, previous 2 lscs with ovarian mass-1, severe oligohydramnios -2, previous LSCS with breech -1. 1 patient who underwent LSCS died. 1 patient required exploratory laparotomy for drainage of pelvic haematoma and required blood and fresh frozen plasma. 2 patient who underwent LSCS were transfused blood and fresh frozen plasma both pre and post-operatively .

5/38 patients died in antenatal period and 2/38 had 2nd trimester abortion.

c) Maternal outcome

Mortality	20 (52.63 %)
Intensive care	26 (68.4%)
Blood & blood product transfusion	23 (60 %)

Maternal complications

Hepatic encephalopathy	12(31.6%)
DIC	14(36.8%)
Sepsis	11(28.9%)
PPH	7 (18.4%)
AKI	6(15.8%)
Acute fulminant hepatitis	15(39.5%)
Ascites	3
Hepato-renal syndrome	1
Pleural Effusion	1
Pelvic Hematoma	1

In our study, maternal mortality rate was 52.63 % including 5 antenatal deaths. Most of these patients (75 % i.e 15 out of 20 deaths) presented with acute fulminant hepatitis with hepatic encephalopathy.

Highest bilirubin level observed was 28. Median bilirubin value was 18.7.

Bilirubin level was ranging between 8.7 to 28 with grossly elevated liver transaminases (highest being SGOT- 4406, SGPT- 3491) among the expired patients.

The most common maternal complication was acute fulminant hepatitis (39.5 %) , DIC (36.8 %) and hepatic encephalopathy (31.6%).

Cases complicated by DIC were found to have Prothrombin time ranging between 16.5 to 70, with median value as 39.3. Thrombocytopenia was also seen in association in 92.8 % patients with DIC.

Post partum haemorrhage (18.4 %) and Acute kidney injury (15.8 %) were the other complications which added to mortality and morbidity.

Most of the cases of PPH were managed medically and blood & blood products transfusion. Only 1 case required exploratory laparotomy with devascularisation of uterus.

68 % cases required blood and blood products transfusion reasons being post partum haemorrhage, anemia, disseminated intravascular coagulation.

90 % cases who died were referred from peripheral hospitals with hyperbilirubinemia, hepatic encephalopathy, acute fulminant hepatitis and DIC.

2 cases referred from peripheral hospital with acute fulminant hepatitis with hepatic encephalopathy with coagulopathy died within 6 hours of admission.

VI. Comparative Study

	Maternal mortality	Hepatic Encephalopathy	Acute fulminant hepatitis	DIC
Our study	52.63 %	31.6 %	39.5 %	36.8 %
Yadav S et al[10]	52 %	34 %	38 %	56 %
Prasad GS et al[11]	5 %	9.09 %	9.09 %	32.7%
Singh S et al[12]	65%	-	70%	-

	NICU	Still birth	Abortion
Our study	22.58 %	32.25 %	5.26 %
Yadav S et al[10]	33.34 %	27.78 %	12 %
Prasad GS et al[11]	40.42 %	4.08 %	1.81 %

VII. Conclusion and Recommendation

Our study shows that pregnant women with acute viral hepatitis due to hepatitis E had a high mortality rate especially when infected in 3rd trimester and post-partum period. They also had poor obstetrics and fetal outcome.

Early diagnosis and active management can improve the outcome. Pregnant women should be closely monitored for fetal well-being and signs of fetal distress by periodic ante-natal scan, biophysical profile , non-stress test. They should be counselled about daily fetal kick count.

Hepatitis E is a preventable disease so emphasis should be on sanitation, personal hygiene, hand washing, proper sewage disposal, facilities for clean drinking water and awareness regarding these.

Vaccine against hep- E is available and can reduce the morbidity and mortality associated with pregnancy[12]. HEV 239 vaccine is safe for both mother and fetus and there was no hepatitis E infection in immunised pregnant women[13]. India being an endemic area for hepatitis E with high mortality rate this may be considered as an option.

References Références Referencias

1. Labrique AB, Sikder SS, Krain LJ, West KPJr, Christian P, Rashid M, et al.Hepatitis E, a vaccine-preventable cause of maternal deaths. Emerg Infect Dis2012; 18:1401-4.
2. Purcell RH, Emerson SU. Hepatitis E: an emerging awareness of an old disease. J Hepatol2008; 48:494-503.
3. Aggarwall R. Clinical presentation of hepatitis E. Virus Res 2011; 161:15-22.
4. Renou C, Gobert V, Locher C, Moumen A, Timbely O, Savary J. Prospective study of hepatitis E virus infection among pregnant women in France. Virol J2014; 11:11-68.
5. Renou C, Gobert V, Locher C, Moumen A, Timbely O, Savary J. Prospective study of hepatitis E virus infection among pregnant women in France. Virol J2014; 11:11-68.
6. Jilani, N., Das, B.C., Husain, S.A., Baweja, U.K., Chattopadhya, D., Gupta, R.K., Sardana, S. and Kar, P. (2007), Hepatitis E virus infection and fulminant hepatic failure during pregnancy. Journal of Gastroenterology and Hepatology, 22: 676-682.
7. Kasper L, Fauci J. Acute viral hepatitis. Harrison's Princ Intern Med. 2015; 2(18):2537–2555.
8. Lindemann ML, Gabilondo G, Romero B, et al. Low prevalence of Hepatitis E infection among pregnant women in Madrid, Spain. J Med Virol. 2010; 82:1666–1668. doi: 10.1002/jmv.21840.
9. Kasper L, Fauci J. Acute viral hepatitis. Harrison's Princ Intern Med. 2015; 2(18):2537–2555.
10. Yadav S, Shirodker S, Kshirsagar S. Maternal and fetal outcome in pregnancy with hepatitis E virus infection. Int J Reprod Contracept Obstet Gynecol 2016; 5:3482-90.
11. Prasad, G. S., Prasad, S., Bhupali, A., Patil, A. N., & Parashar, K. (2016). A Study of Hepatitis E in Pregnancy: Maternal and Fetal Outcome. *Journal of obstetrics and gynaecology of India*, *66*(Suppl 1), 18–23.
12. Singh S, Mohanty A, Joshi YK, Dwivedi SN, Deka D. Outcome of hepatitis E virus infection in Indian pregnant women admitted to a tertiary care hospital. *Indian J Med Res*. 2001; 113:35-39.
13. Zhu FC, Zhang J, Zhang XE, Zhou C, Wang ZZ, Haung SJ. Efficacy and safety of a recombinant hepatitis E vaccine in healthy adults: a large-scale, randomised, double blind placebo-controlled phase 3 trial. Lancet 2010; 376:895-902.
14. Zhang J, Shih JW, Xia NS. Long-term efficacy of a hepatitis E vaccine. N Engl J Med2015; 372:914-22.

Special cases:

1.21 year old, primigravida, with 34 weeks of gestation in a known case of rheumatic heart disease s/p MVR, with c/o fever with chills, jaundice, altered sensorium and moderate anemia referred from periphery.

On admission –

Bili-13.8 SGOT-821 SGPT-219 Hb-8.3 TLC-19600 PLT-61000

Patient was diagnosed to be anti-HEV- IgM positive with hepatic encephalopathy with dengue haemorrhagic fever.

Patient had PPH, developed AKI and died on Day 6 post-natal day.

2.25 year old, G3P2L2 with previous 2 LSCS with 35 weeks of gestation with right ovarian cyst was referred in view of threatened preterm and jaundice.

On admission

Bili-2.6 SGOT-48 SGPT-26, Tumor markers-negative, Viral markers - anti-HEV- IgM positive

USG abdomen s/o right adnexal solid cystic mass (15x10x15cm) likely to be mucinous cystadenoma.

Elective LSCS with right ovarian cystectomy with right salpingoopherectomy with left tubal ligation was done at 37 completed weeks.

Histopathological report was s/o right mucinous cystadenoma.

Patient was discharged with Bili- 0.6 SGOT- 12 SGPT-25

3.38 year old, G2P1L1 with previous LSCS with 32 weeks of gestation with PROM with breech presentation with hyperbilirubinemia was referred from periphery.

On admission,

Bili-13.5 SGOT-289 SGPT-336 PT/INR-WNL Viral markers-anti-HEV- IgM positive.

Emergency LSCS was done, baby was admitted in NICU in view of respiratory distress.

Day 2, post-op patient developed breathlessness and increase in abdominal girth was seen.

USG abdomen was s/o haematoma (450-500 cc) which was drained by pig tail catheter.

2 units PCV and 4 units FFP were transfused.

Patient had 2 episodes of focal seizures, anti-convulsants started.

Patient developed ascitis and pleural effusion.

Emergency exploratory laparotomy was done with drainage of pelvic haematoma.

2 units WB and 4 units FFP were transfused.

Patient was discharged with Bili- 3.2 SGOT-85 SGPT-109

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Obstetric Outcomes in Covid-19 Pandemic: Single Center Experience at Tertiary Level Institute

By Dr. Priya Bulchandani & Dr. Tushar Palve

Abstract- *Background:* There has been increased severity and susceptibility in pregnant females with previous viral illness outbreaks. The data of pregnancy outcomes with COVID-19 are lacking and available in few small number series. The objective of this study was to report the maternal and perinatal outcomes of COVID-19 during pregnancy.

Methodology: Retrospective records of 185 pregnant women with laboratory confirmed COVID-19 disease in single center were reviewed from 1st May to 31st July 2020 and descriptive analysis of outcomes was done.

Results: There were 185 laboratory confirmed COVID-19 pregnant females in this study with mean age of 27.3+ 5.33 years. The majority presented in third trimester with no sign and symptoms of disease activity (66%). Lymphocytopenia (34.81%) ,elevated levels of C-reactive protein 49.95% and chest X-ray abnormalities in 32.43% were observed. 72.51% of women were delivered vaginaly and 27.49% required caesarean section with major indication being previous LSCS. The rate of preterm delivery was 17.54% with PPROM in 11.70%. Three maternal intensive care unit admissions were noted but no maternal death. 4 neonatal death and 4 still birth were also noted.

Keywords: *COVID-19, outcomes, delivery, pregnancy.*

GJMR-E Classification: *NLMC Code: WQ 256*

Strictly as per the compliance and regulations of:

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Conclusion: The study concludes no significant increase in rate of maternal or fetal complications with COVID-19, no increased susceptibility of pregnant female in contracting COVID-19 and no preferred mode of delivery. The multidisciplinary approach and further research is warranted for successful obstetric outcome.

Keywords: COVID-19, outcomes, delivery, pregnancy.

I. Introduction

- Since the first reports of cases from Wuhan, a city in the Hubei, Province of China, more than 20 million cases of COVID-19 have been reported(1). The emerging COVID-19 pandemic is caused by severe acute respiratory syndrome coronavirus 2 (SARS CoV-2). This has led to turmoil in healthcare conduct. There is evolving understanding and hence, upcoming protocols with progressing pandemic.
- Pregnant females are at a heightened risk of contracting viral lower respiratory tract infections due to altered physiology with elevated diaphragm, increased oxygen consumption and mucosal edema of respiratory tract making them relatively intolerant to hypoxic environment. There are also alterations in immune response with pregnancy which may contribute further to this increased vulnerability (2,3). It has been reported that viral pneumonia in pregnant women is associated with an increased risk of preterm birth, foetal growth restriction (FGR), and perinatal mortality (4).
- In 1918 influenza pandemic caused a mortality rate of 2.6 % in overall population but 37% among pregnant women (5). In 2003 it was reported that approximately half of pregnant females diagnosed with SARS-COV required critical care support with one third requiring ventilatory support and maternal demise in one fourth of the cases (6). In 2009 pregnant women were reported to be at increased risk for complications of H1N1 2009 Influenza virus infection and a higher estimated rate of hospital admission than of general population (2). However, in previous small number studies, similar results have not been demonstrated in pregnant females with COVID-19(7-9).
- This study aims to report the impact on women affected by coronavirus during pregnancy. This study was done to address the issues of routine obstetric practice, susceptibility of pregnant females to COVID-19, risk of pregnancy related complications in association with COVID-19, modifications required in antenatal care, care during labor, mode of delivery, post-partum sequelae and neonatal outcomes.

II. Material and Methods

We retrospectively reviewed the clinical records of 185 pregnant women with laboratory confirmed COVID-19 admitted in our center. The epidemiology, outcomes and challenges faced were analyzed. The impact of COVID 19 in ante and peri-partum period, neonatal and maternal sequelae of this disease were addressed in this study.

III. Results

a) Clinical characteristics

- 185 consecutive laboratory confirmed COVID-19 affected pregnant females were included in this study with a mean age of 27.3 $\pm$ 5.33years. Majority were in gestational ages of 37-40 weeks (56.76%, 105/185).
- There was history of residence in containment zone in 110 cases (59.46%), 12.97% cases had contact

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with laboratory confirmed case while 51 patients had no significant supportive history, however were found infected on routine screening. The manifestations on presentation are enumerated in Table. In 35.68% (66/185) cases there were no signs or symptoms of disease activity. Associated comorbidities were seen in 29.19% (54/185) which included hypertensive disorders in 10.81% (20/185) cases, gestational diabetes mellitus in 7.57% (14/185), severe anemia in 4.86% (9/185), hypothyroidism in 2.70% (5/185), bronchial asthma in 2.16% (4/185) and pulmonary TB in 1.08% (2/185).

- ICU admission was required in 3 patients, 2 of them required mechanical ventilatory support and 1 maintained oxygenation on non-invasive ventilation. There was no maternal death in this study.

Table 1: Baseline charastitics and clinical outcome covid-19 disease in pregnancy

Age (years) (Mean ± SD)	*27.3 ± 5.33*
• <20	• 5
• 20-25	• 75
• 25-30	• 57
• 30-35	• 37
• >35	• 11
Gestational age at admission (weeks)	•
• <14	• 9
• 14-27	• 5
• 28-36	• 43
• 37-40	• 105
• >40	• 23
Parity -	•
• Primi-gravida	• 75
• Multi-gravida	• 110
Symptoms -	
• Fatigue	• 30
• Fever	• 25
• Cough	• 20
• Myalgia	• 20
• Diarrhea	• 9
• Sore throat	• 5
• Dyspnea	• 3
• Asymptomatic	• 66
Comorbidities -	•
• Hypertensive disorders	• 20
• Gestational diabetes mellitus	• 14
• Severe anemia	• 9
• Hypothyroidism	• 5
• Bronchial asthma	• 4
• Pulmonary Tuberculosis	• 2

Treatment Received -	*Number of Patients*
• Antibiotic therapy	• 160
• Antiviral therapy	• 3
• Use of corticosteroid	• 3
ICU admission -	• 3
• Non-invasive ventilation	• 1
• Invasive mechanical ventilation	• 2
Hospital Stay (days)	16.74 ± 5.55

b) Laboratory and radiological findings on admission

Lymphocytopenia was present in 34.81% (55/185) cases while leucopenia was observed in 21.62% (40/185) cases. Elevated levels of C-reactive protein were seen in 45.95% (85/185) of patients. Chest X-ray revealed abnormal findings in 32.43% (60/185) cases.

c) *Pregnancy outcomes*

- 9 cases presented before 14 weeks of gestation of which 2cases were complicated with complete spontaneous abortion, 2 cases with ruptured ectopic and 1 case with missed abortion.
- The remaining 4 patients were discharged and kept on follow up. They have crossed 20 weeks of gestation with normal fetal growth and no anomaly observed in morphology scan. 5 patients with gestational age at presentation between 14 – 27 weeks were discharged after an uneventful hospital stay and are maintaining fine at follow up.
- 43 cases presented between 28-37 weeks of gestation of which 30 cases had pre-term delivery and remaining 13 cases were delivered at term. Of the 30 cases who underwent pre-term delivery, 20 cases had PPROM.
- 124 cases were subjected to vaginal delivery while 47 cases required cesarean section with majority (59.57%, 28/47) due to previous LSCS. The other indications for cesarean section are mentioned in Table.

Table 2: Maternal outcome in covid 19

Mode of delivery- • Cesarean delivery • Vaginal delivery • Not delivered	 • 47 • 124 • 14
Indication of cesarean delivery - • COVID-19 pneumonia • Previous cesarean delivery • Mal-presentation • Cephalo-pelvic disproportion • Placenta Previa • Failure to progress • Pre-eclampsia • Others • Fetal distress	 • None • 28 • 5 • 4 • 3 • 2 • 2 • 2 • 1
Gestational age at delivery • >37 weeks • < 37 weeks ✓ Associated with PPROM	*Number* • 141 • 30 ✓ 20

d) *Clinical Outcome In Neonates*

Among 171 neonates, 22 were transferred to NICU for further management for reasons summarized in Table. There were 4 cases of neonatal death. There were no cases of fetal death.

Table 3: Neonatal outcome in covid-19 disease

Neonatal birth weight (kgs) <1.5 1.5-2.5 2.5-3.5 >3.5	 10 26 130 5
Transferred to NICU • Low birth weight • Meconium aspiration syndrome • Congenital anomalies • Birth Asphyxia	22 • 10 • 4 • 2 • 6
Neonatal death	4
Still birth	4

IV. Discussion

- This study reports observations of 185 pregnant females who were laboratory confirmed COVID-19 cases. The predominant symptom was observed to be fatigue in 16.22 % (30/185) which was different from the past studies that reported fever as the commonest manifestation (9-11).
- The fatigue may also be present as manifestation of routine pregnancy and therefore could have been confounding with results. They were asymptomatic in 35.68 % cases and were detected in routine testing done prior to hospital admission. In majority of these there was history of residence in containment zones or hotspots or contact with COVID-19 cases. This entails the high index of suspicion that needs to be kept with emphasis on history and routine screening of all before hospital admission to effectively curtail the spread to other patients and healthcare personnel.
- 3 patients (1.62%) required ICU care with 2 of them requiring ventilatory support and one on non-invasive ventilation, however, they recovered and were transferred back to the ward. One of them had pre-term delivery and rest 2 delivered at term with no adverse foetal outcome. This suggests that effective oxygenation and critical care did not worsen the neonatal outcomes, although, the less number of these patients limit us in conclusively authenticating this observation. The ICU admission rates are similar to the study by Huntley et al which quoted 3 % cases requiring ICU care(12).
- The laboratory parameters showed lymphocytopenia in 34.81 % and leukopenia in 21.62% which suggests that lymphocytes were reduced even in patients with normal leucocyte count which has also been demonstrated in other studies with striking differences. A study of 393 hospitalized patients in New York revealed lymphocytopenia in 90 % whilst leukopenia in approximately 15 % only(13). CRP elevations have been associated with inflammation and COVID-19 disease process in cytokine storm states. These were elevated in 45.95% patients in this study corroborating the other studies in this regard. In other studies, CRP elevations have been found as high as 67 % with COVID-19.(8,9,10)
- The Chest X-ray showed abnormal findings predominantly consisting of ground glass opacities or patchy infiltrates in lung fields in 32.43% cases (60/185). CT scan was not done in this study in majority of patients.
- The rates of spontaneous abortion was observed to be 23.08 % cases (3/13, 13 cases presented at or before 20 weeks of gestational age). This rate has been found to be 12.5 % in the study by Yan et al comprising of 116 patients(14).
- The rate of pre-term delivery was noted to be 17.54% (30/171). Of these 30 patients, 20 (66.67%) had PPROM. The overall incidence of PPROM was 11.70% (20/171) which was higher than the study by Yan et al who observed 6.1 % incidence of PPROM(14).
- Wong et al in their study of 12 pregnant females infected with SARS-CoV reported 3 cases of maternal demise, more than 50 % of those who presented before 12 weeks were complicated with spontaneous abortion, 80 % females presenting after 24 weeks had pre-term delivery and ongoing pregnancies were complicated with Intra-uterine growth restriction (15). This study, however, concludes reassuring data with COVID-19.
- The mode of delivery was vaginal in 72.51% and caesarean section in 27.49% with major indication being previous LSCS. No pregnant female underwent LSCS due to COVID-19 pneumonia. Therefore, unless the clinical severity and respiratory status warrant urgent intervention, mode of delivery should be decided without considering COVID-19 status. Liu et al found that delivery did not exacerbate the symptoms of COVID-19. This fact could be corroborated in this study.
- Neonatal COVID-19 testing was not done as routine protocol, hence, risk of vertical transmission cannot be calculated from this study. The risk of vertical transmission has been found to be very low in past studies.(11,14)
- There was no maternal death observed in this study. The findings of Ellington et al also documented that COVID-19 confers no increased mortality compared with non-pregnant reproductive age females. The utmost level of care for a pregnant female with COVID-19 revolves around the multidisciplinary co-operation amongst obstetricians, intensive care specialists, paediatricians trained in neonatal care, epidemiologists and infectious disease surveillance experts.

V. Limitations

This study entails a single centre experience with limited patient subset. The non-carrying out of routine neonatal testing due to logistic and economic issues prevents in ascertaining vertical transmission risk. CT scan which has become an indispensable modality was not used in this study due to institutional logistic issues. This study also has the limitation in concluding vaginal mode of delivery and breastfeeding confer an additional risk of vertical transmission of COVID-19.

VI. Conclusion

This study concludes that presently there is no evidence that pregnant women with COVID-19 are more prone to experience severe pneumonia than non-pregnant patients. The study suggests that one mode of delivery is not superior over the other as far as risk associated with COVID-19 disease. The risks of pregnancy related complications are not significantly increased due to COVID-19.The ongoing research and data collection may answer the questions in relation to the risk of congenital infection, intrapartum management, and vertical transmission.

References Références Referencias

1. Worldometer. COVID-19 coronavirus pandemic. Accessed on August 10, 2020, from https://www.worldometers.info/
2. Jamieson DJ, Honein MA, Rasmussen SA, et al. H1N1 2009 influenza virus infection during pregnancy in the USA. Lancet. 2009; 374(9688): 451-8.
3. Naccasha N, Gervasi MT, Chaiworapongsa T, et al. Phenotypic and metabolic characteristics of monocytes and granulocytes in normal pregnancy and maternal infection. Am J Obstet Gynecol. 2001; 185(5): 1118-23.
4. Madinger NE, Greenspoon JS, Ellrodt AG. Pneumonia during pregnancy: has modern technology improved maternal and fetal outcome?. Am J Obstet Gynecol. 1989; 161(3):657-62.
5. Gottfredsson M. Spaenskaveikin á Islandi 1918. Laerdómur í laeknisfraediogsögu [The Spanish flu in Iceland 1918. Lessons in medicine and history]. Laeknabladid. 2008; 94(11):737-45.
6. Schwartz DA, Graham AL. Potential Maternal and Infant Outcomes from (Wuhan) Coronavirus 2019-nCoV Infecting Pregnant Women: Lessons from SARS, MERS, and Other Human Coronavirus Infections. Viruses. 2020; 12(2):194.
7. Chen H, Guo J, Wang C, et al. Clinical characteristics and intrauterine vertical transmission potential of COVID-19 infection in nine pregnant women: a retrospective review of medical records. Lancet. 2020; 395(10226):809-15.
8. Zhu H, Wang L, Fang C, et al. Clinical analysis of 10 neonates born to mothers with 2019-nCoV pneumonia. TranslPediatr. 2020; 9(1):51-60.
9. Zhang L, Jiang Y, Wei M, et al. Zhonghua Fu Chan KeZaZhi. 2020; 55(3):166-71.
10. Guan WJ, Ni ZY, Hu Y, et al. Clinical Characteristics of Coronavirus Disease 2019 in China. N Engl J Med. 2020; 382(18):1708-20.
11. Wu Z, McGoogan JM. Characteristics of and Important Lessons from the Coronavirus Disease 2019 (COVID-19) Outbreak in China: Summary of a Report of 72 314 Cases From the Chinese Center for Disease Control and Prevention [published online ahead of print, 2020 Feb 24]. JAMA.
12. Huntley BJF, Huntley ES, Di Mascio D, Chen T, Berghella V, Chauhan SP. Rates of Maternal and Perinatal Mortality and Vertical Transmission in Pregnancies Complicated by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-Co-V-2) Infection: A Systematic Review. Obstet Gynecol. 2020; 136(2):303-12.
13. Goyal P, Choi JJ, Pinheiro LC, et al. Clinical Characteristics of Covid-19 in New York City. N Engl J Med. 2020; 382(24):2372-4.
14. Yan J, Guo J, Fan C, et al. Coronavirus disease 2019 in pregnant women: a report based on 116 cases. Am J Obstet Gynecol. 2020; 223(1): 111.e1-e14.
15. Wong SF, Chow KM, Leung TN, et al. Pregnancy and perinatal outcomes of women with severe acute respiratory syndrome. Am J Obstet Gynecol. 2004; 191(1): 292-7

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FELLOW OF MEDICAL RESEARCH COUNCIL is the most prestigious membership of Global Journals. It is an award and membership granted to individuals that the Open Association of Research Society judges to have made a 'substantial contribution to the improvement of computer science, technology, and electronics engineering.

The primary objective is to recognize the leaders in research and scientific fields of the current era with a global perspective and to create a channel between them and other researchers for better exposure and knowledge sharing. Members are most eminent scientists, engineers, and technologists from all across the world. Fellows are elected for life through a peer review process on the basis of excellence in the respective domain. There is no limit on the number of new nominations made in any year. Each year, the Open Association of Research Society elect up to 12 new Fellow Members.

To the institution

Get letter of appreciation

Global Journals sends a letter of appreciation of author to the Dean or CEO of the University or Company of which author is a part, signed by editor in chief or chief author.

Exclusive Network

Get access to a closed network

A FMRC member gets access to a closed network of Tier 1 researchers and scientists with direct communication channel through our website. Fellows can reach out to other members or researchers directly. They should also be open to reaching out by other.

Career | Credibility | Exclusive | Reputation

Certificate

Certificate, LoR and Laser-Momento

Fellows receive a printed copy of a certificate signed by our Chief Author that may be used for academic purposes and a personal recommendation letter to the dean of member's university.

Career | Credibility | Exclusive | Reputation

Designation

Get honored title of membership

Fellows can use the honored title of membership. The “FMRC” is an honored title which is accorded to a person’s name viz. Dr. John E. Hall, Ph.D., FMRC or William Walldroff, M.S., FMRC.

Career | Credibility | Exclusive | Reputation

Recognition on the Platform

Better visibility and citation

All the Fellow members of FMRC get a badge of "Leading Member of Global Journals" on the Research Community that distinguishes them from others. Additionally, the profile is also partially maintained by our team for better visibility and citation. All fellows get a dedicated page on the website with their biography.

Career | Credibility | Reputation

Future Work

Get discounts on the future publications

Fellows receive discounts on the future publications with Global Journals up to 60%. Through our recommendation programs, members also receive discounts on publications made with OARS affiliated organizations.

Career | Financial

GJ Internal Account

Unlimited forward of Emails

Fellows get secure and fast GJ work emails with unlimited storage of emails that they may use them as their primary email. For example,
john [AT] globaljournals [DOT] org.

Career | Credibility | Reputation

Premium Tools

Access to all the premium tools

To take future researches to the zenith, fellows receive access to all the premium tools that Global Journals have to offer along with the partnership with some of the best marketing leading tools out there.

Financial

Conferences & Events

Organize seminar/conference

Fellows are authorized to organize symposium/seminar/conference on behalf of Global Journal Incorporation (USA). They can also participate in the same organized by another institution as representative of Global Journal. In both the cases, it is mandatory for him to discuss with us and obtain our consent. Additionally, they get free research conferences (and others) alerts.

Career | Credibility | Financial

Early Invitations

Early invitations to all the symposiums, seminars, conferences

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Exclusive

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Earn 60% of sales proceeds

Fellows can publish articles (limited) without any fees. Also, they can earn up to 70% of sales proceeds from the sale of reference/review books/literature/publishing of research paper. The FMRC member can decide its price and we can help in making the right decision.

Exclusive | Financial

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Get a remuneration of 15% of author fees

Fellow members are eligible to join as a paid peer reviewer at Global Journals Incorporation (USA) and can get a remuneration of 15% of author fees, taken from the author of a respective paper.

Financial

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ASSOCIATE OF MEDICAL RESEARCH COUNCIL

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The primary objective is to recognize the leaders in research and scientific fields of the current era with a global perspective and to create a channel between them and other researchers for better exposure and knowledge sharing. Members are most eminent scientists, engineers, and technologists from all across the world. Associate membership can later be promoted to Fellow Membership. Associates are elected for life through a peer review process on the basis of excellence in the respective domain. There is no limit on the number of new nominations made in any year. Each year, the Open Association of Research Society elect up to 12 new Associate Members.

To the institution

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A AMRC member gets access to a closed network of Tier 2 researchers and scientists with direct communication channel through our website. Associates can reach out to other members or researchers directly. They should also be open to reaching out by other.

Career | Credibility | Exclusive | Reputation

Certificate

Certificate, LoR and Laser-Momento

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Exclusive

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Earn 60% of sales proceeds

Associates can publish articles (limited) without any fees. Also, they can earn up to 30-40% of sales proceeds from the sale of reference/review books/literature/publishing of research paper

Exclusive | Financial

Reviewers

Get a remuneration of 15% of author fees

Associate members are eligible to join as a paid peer reviewer at Global Journals Incorporation (USA) and can get a remuneration of 15% of author fees, taken from the author of a respective paper.

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Associate	Fellow	Research Group	Basic
$4800 **lifetime designation**	$6800 **lifetime designation**	$12500.00 **organizational**	APC **per article**
Certificate, LoR and Momento **2** discounted publishing/year **Gradation** of Research **10** research contacts/day **1 GB** Cloud Storage **GJ** Community Access	**Certificate,** LoR and Momento **Unlimited** discounted publishing/year **Gradation** of Research **Unlimited** research contacts/day **5 GB** Cloud Storage **Online Presense** Assistance **GJ** Community Access	**Certificates,** LoRs and Momentos **Unlimited** free publishing/year **Gradation** of Research **Unlimited** research contacts/day **Unlimited** Cloud Storage **Online Presense** Assistance **GJ** Community Access	**GJ** Community Access

Preferred Author Guidelines

We accept the manuscript submissions in any standard (generic) format.

We typeset manuscripts using advanced typesetting tools like Adobe In Design, CorelDraw, TeXnicCenter, and TeXStudio. We usually recommend authors submit their research using any standard format they are comfortable with, and let Global Journals do the rest.

Alternatively, you can download our basic template from https://globaljournals.org/Template

Authors should submit their complete paper/article, including text illustrations, graphics, conclusions, artwork, and tables. Authors who are not able to submit manuscript using the form above can email the manuscript department at submit@globaljournals.org or get in touch with chiefeditor@globaljournals.org if they wish to send the abstract before submission.

Before and during Submission

Authors must ensure the information provided during the submission of a paper is authentic. Please go through the following checklist before submitting:

1. Authors must go through the complete author guideline and understand and *agree to Global Journals' ethics and code of conduct,* along with author responsibilities.
2. Authors must accept the privacy policy, terms, and conditions of Global Journals.
3. Ensure corresponding author's email address and postal address are accurate and reachable.
4. Manuscript to be submitted must include keywords, an abstract, a paper title, co-author(s') names and details (email address, name, phone number, and institution), figures and illustrations in vector format including appropriate captions, tables, including titles and footnotes, a conclusion, results, acknowledgments and references.
5. Authors should submit paper in a ZIP archive if any supplementary files are required along with the paper.
6. Proper permissions must be acquired for the use of any copyrighted material.
7. Manuscript submitted *must not have been submitted or published elsewhere* and all authors must be aware of the submission.

Declaration of Conflicts of Interest

It is required for authors to declare all financial, institutional, and personal relationships with other individuals and organizations that could influence (bias) their research.

Policy on Plagiarism

Plagiarism is not acceptable in Global Journals submissions at all.

Plagiarized content will not be considered for publication. We reserve the right to inform authors' institutions about plagiarism detected either before or after publication. If plagiarism is identified, we will follow COPE guidelines:

Authors are solely responsible for all the plagiarism that is found. The author must not fabricate, falsify or plagiarize existing research data. The following, if copied, will be considered plagiarism:

- Words (language)
- Ideas
- Findings
- Writings
- Diagrams
- Graphs
- Illustrations
- Lectures

- Printed material
- Graphic representations
- Computer programs
- Electronic material
- Any other original work

Authorship Policies

Global Journals follows the definition of authorship set up by the Open Association of Research Society, USA. According to its guidelines, authorship criteria must be based on:

1. Substantial contributions to the conception and acquisition of data, analysis, and interpretation of findings.
2. Drafting the paper and revising it critically regarding important academic content.
3. Final approval of the version of the paper to be published.

Changes in Authorship

The corresponding author should mention the name and complete details of all co-authors during submission and in manuscript. We support addition, rearrangement, manipulation, and deletions in authors list till the early view publication of the journal. We expect that corresponding author will notify all co-authors of submission. We follow COPE guidelines for changes in authorship.

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Appealing Decisions

Unless specified in the notification, the Editorial Board's decision on publication of the paper is final and cannot be appealed before making the major change in the manuscript.

Acknowledgments

Contributors to the research other than authors credited should be mentioned in Acknowledgments. The source of funding for the research can be included. Suppliers of resources may be mentioned along with their addresses.

Declaration of funding sources

Global Journals is in partnership with various universities, laboratories, and other institutions worldwide in the research domain. Authors are requested to disclose their source of funding during every stage of their research, such as making analysis, performing laboratory operations, computing data, and using institutional resources, from writing an article to its submission. This will also help authors to get reimbursements by requesting an open access publication letter from Global Journals and submitting to the respective funding source.

Preparing your Manuscript

Authors can submit papers and articles in an acceptable file format: MS Word (doc, docx), LaTeX (.tex, .zip or .rar including all of your files), Adobe PDF (.pdf), rich text format (.rtf), simple text document (.txt), Open Document Text (.odt), and Apple Pages (.pages). Our professional layout editors will format the entire paper according to our official guidelines. This is one of the highlights of publishing with Global Journals—authors should not be concerned about the formatting of their paper. Global Journals accepts articles and manuscripts in every major language, be it Spanish, Chinese, Japanese, Portuguese, Russian, French, German, Dutch, Italian, Greek, or any other national language, but the title, subtitle, and abstract should be in English. This will facilitate indexing and the pre-peer review process.

The following is the official style and template developed for publication of a research paper. Authors are not required to follow this style during the submission of the paper. It is just for reference purposes.

Manuscript Style Instruction (Optional)

- Microsoft Word Document Setting Instructions.
- Font type of all text should be Swis721 Lt BT.
- Page size: 8.27" x 11'", left margin: 0.65, right margin: 0.65, bottom margin: 0.75.
- Paper title should be in one column of font size 24.
- Author name in font size of 11 in one column.
- Abstract: font size 9 with the word "Abstract" in bold italics.
- Main text: font size 10 with two justified columns.
- Two columns with equal column width of 3.38 and spacing of 0.2.
- First character must be three lines drop-capped.
- The paragraph before spacing of 1 pt and after of 0 pt.
- Line spacing of 1 pt.
- Large images must be in one column.
- The names of first main headings (Heading 1) must be in Roman font, capital letters, and font size of 10.
- The names of second main headings (Heading 2) must not include numbers and must be in italics with a font size of 10.

Structure and Format of Manuscript

The recommended size of an original research paper is under 15,000 words and review papers under 7,000 words. Research articles should be less than 10,000 words. Research papers are usually longer than review papers. Review papers are reports of significant research (typically less than 7,000 words, including tables, figures, and references)

A research paper must include:

a) A title which should be relevant to the theme of the paper.
b) A summary, known as an abstract (less than 150 words), containing the major results and conclusions.
c) Up to 10 keywords that precisely identify the paper's subject, purpose, and focus.
d) An introduction, giving fundamental background objectives.
e) Resources and techniques with sufficient complete experimental details (wherever possible by reference) to permit repetition, sources of information must be given, and numerical methods must be specified by reference.
f) Results which should be presented concisely by well-designed tables and figures.
g) Suitable statistical data should also be given.
h) All data must have been gathered with attention to numerical detail in the planning stage.

Design has been recognized to be essential to experiments for a considerable time, and the editor has decided that any paper that appears not to have adequate numerical treatments of the data will be returned unrefereed.

i) Discussion should cover implications and consequences and not just recapitulate the results; conclusions should also be summarized.
j) There should be brief acknowledgments.
k) There ought to be references in the conventional format. Global Journals recommends APA format.

Authors should carefully consider the preparation of papers to ensure that they communicate effectively. Papers are much more likely to be accepted if they are carefully designed and laid out, contain few or no errors, are summarizing, and follow instructions. They will also be published with much fewer delays than those that require much technical and editorial correction.

The Editorial Board reserves the right to make literary corrections and suggestions to improve brevity.

Format Structure

It is necessary that authors take care in submitting a manuscript that is written in simple language and adheres to published guidelines.

All manuscripts submitted to Global Journals should include:

Title

The title page must carry an informative title that reflects the content, a running title (less than 45 characters together with spaces), names of the authors and co-authors, and the place(s) where the work was carried out.

Author details

The full postal address of any related author(s) must be specified.

Abstract

The abstract is the foundation of the research paper. It should be clear and concise and must contain the objective of the paper and inferences drawn. It is advised to not include big mathematical equations or complicated jargon.

Many researchers searching for information online will use search engines such as Google, Yahoo or others. By optimizing your paper for search engines, you will amplify the chance of someone finding it. In turn, this will make it more likely to be viewed and cited in further works. Global Journals has compiled these guidelines to facilitate you to maximize the web-friendliness of the most public part of your paper.

Keywords

A major lynchpin of research work for the writing of research papers is the keyword search, which one will employ to find both library and internet resources. Up to eleven keywords or very brief phrases have to be given to help data retrieval, mining, and indexing.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy: planning of a list of possible keywords and phrases to try.

Choice of the main keywords is the first tool of writing a research paper. Research paper writing is an art. Keyword search should be as strategic as possible.

One should start brainstorming lists of potential keywords before even beginning searching. Think about the most important concepts related to research work. Ask, “What words would a source have to include to be truly valuable in a research paper?” Then consider synonyms for the important words.

It may take the discovery of only one important paper to steer in the right keyword direction because, in most databases, the keywords under which a research paper is abstracted are listed with the paper.

Numerical Methods

Numerical methods used should be transparent and, where appropriate, supported by references.

Abbreviations

Authors must list all the abbreviations used in the paper at the end of the paper or in a separate table before using them.

Formulas and equations

Authors are advised to submit any mathematical equation using either MathJax, KaTeX, or LaTeX, or in a very high-quality image.

Tables, Figures, and Figure Legends

Tables: Tables should be cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g., Table 4, a self-explanatory caption, and be on a separate sheet. Authors must submit tables in an editable format and not as images. References to these tables (if any) must be mentioned accurately.

Figures

Figures are supposed to be submitted as separate files. Always include a citation in the text for each figure using Arabic numbers, e.g., Fig. 4. Artwork must be submitted online in vector electronic form or by emailing it.

Preparation of Eletronic Figures for Publication

Although low-quality images are sufficient for review purposes, print publication requires high-quality images to prevent the final product being blurred or fuzzy. Submit (possibly by e-mail) EPS (line art) or TIFF (halftone/ photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Avoid using pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings). Please give the data for figures in black and white or submit a Color Work Agreement form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

For scanned images, the scanning resolution at final image size ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs): >350 dpi; figures containing both halftone and line images: >650 dpi.

Color charges: Authors are advised to pay the full cost for the reproduction of their color artwork. Hence, please note that if there is color artwork in your manuscript when it is accepted for publication, we would require you to complete and return a Color Work Agreement form before your paper can be published. Also, you can email your editor to remove the color fee after acceptance of the paper.

Tips for writing a good quality Medical Research Paper

1. Choosing the topic: In most cases, the topic is selected by the interests of the author, but it can also be suggested by the guides. You can have several topics, and then judge which you are most comfortable with. This may be done by asking several questions of yourself, like "Will I be able to carry out a search in this area? Will I find all necessary resources to accomplish the search? Will I be able to find all information in this field area?" If the answer to this type of question is "yes," then you ought to choose that topic. In most cases, you may have to conduct surveys and visit several places. Also, you might have to do a lot of work to find all the rises and falls of the various data on that subject. Sometimes, detailed information plays a vital role, instead of short information. Evaluators are human: The first thing to remember is that evaluators are also human beings. They are not only meant for rejecting a paper. They are here to evaluate your paper. So present your best aspect.

2. Think like evaluators: If you are in confusion or getting demotivated because your paper may not be accepted by the evaluators, then think, and try to evaluate your paper like an evaluator. Try to understand what an evaluator wants in your research paper, and you will automatically have your answer. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

3. Ask your guides: If you are having any difficulty with your research, then do not hesitate to share your difficulty with your guide (if you have one). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work, then ask your supervisor to help you with an alternative. He or she might also provide you with a list of essential readings.

4. Use of computer is recommended: As you are doing research in the field of medical research then this point is quite obvious. Use right software: Always use good quality software packages. If you are not capable of judging good software, then you can lose the quality of your paper unknowingly. There are various programs available to help you which you can get through the internet.

5. Use the internet for help: An excellent start for your paper is using Google. It is a wondrous search engine, where you can have your doubts resolved. You may also read some answers for the frequent question of how to write your research paper or find a model research paper. You can download books from the internet. If you have all the required books, place importance on reading, selecting, and analyzing the specified information. Then sketch out your research paper. Use big pictures: You may use encyclopedias like Wikipedia to get pictures with the best resolution. At Global Journals, you should strictly follow here.

6. Bookmarks are useful: When you read any book or magazine, you generally use bookmarks, right? It is a good habit which helps to not lose your continuity. You should always use bookmarks while searching on the internet also, which will make your search easier.

7. Revise what you wrote: When you write anything, always read it, summarize it, and then finalize it.

8. Make every effort: Make every effort to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in the introduction—what is the need for a particular research paper. Polish your work with good writing skills and always give an evaluator what he wants. Make backups: When you are going to do any important thing like making a research paper, you should always have backup copies of it either on your computer or on paper. This protects you from losing any portion of your important data.

9. Produce good diagrams of your own: Always try to include good charts or diagrams in your paper to improve quality. Using several unnecessary diagrams will degrade the quality of your paper by creating a hodgepodge. So always try to include diagrams which were made by you to improve the readability of your paper. Use of direct quotes: When you do research relevant to literature, history, or current affairs, then use of quotes becomes essential, but if the study is relevant to science, use of quotes is not preferable.

10. Use proper verb tense: Use proper verb tenses in your paper. Use past tense to present those events that have happened. Use present tense to indicate events that are going on. Use future tense to indicate events that will happen in the future. Use of wrong tenses will confuse the evaluator. Avoid sentences that are incomplete.

11. Pick a good study spot: Always try to pick a spot for your research which is quiet. Not every spot is good for studying.

12. Know what you know: Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

13. Use good grammar: Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice.

Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

14. Arrangement of information: Each section of the main body should start with an opening sentence, and there should be a changeover at the end of the section. Give only valid and powerful arguments for your topic. You may also maintain your arguments with records.

15. Never start at the last minute: Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

16. Multitasking in research is not good: Doing several things at the same time is a bad habit in the case of research activity. Research is an area where everything has a particular time slot. Divide your research work into parts, and do a particular part in a particular time slot.

17. Never copy others' work: Never copy others' work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

18. Go to seminars: Attend seminars if the topic is relevant to your research area. Utilize all your resources.

19. Refresh your mind after intervals: Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

20. Think technically: Always think technically. If anything happens, search for its reasons, benefits, and demerits. Think and then print: When you go to print your paper, check that tables are not split, headings are not detached from their descriptions, and page sequence is maintained.

21. Adding unnecessary information: Do not add unnecessary information like "I have used MS Excel to draw graphs." Irrelevant and inappropriate material is superfluous. Foreign terminology and phrases are not apropos. One should never take a broad view. Analogy is like feathers on a snake. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Never oversimplify: When adding material to your research paper, never go for oversimplification; this will definitely irritate the evaluator. Be specific. Never use rhythmic redundancies. Contractions shouldn't be used in a research paper. Comparisons are as terrible as clichés. Give up ampersands, abbreviations, and so on. Remove commas that are not necessary. Parenthetical words should be between brackets or commas. Understatement is always the best way to put forward earth-shaking thoughts. Give a detailed literary review.

22. Report concluded results: Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

23. Upon conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print for the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects of your research.

Informal Guidelines of Research Paper Writing

Key points to remember:

- Submit all work in its final form.
- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

Final points:

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

The introduction: This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

The discussion section:

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

Writing a research paper is not an easy job, no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record-keeping are the only means to make straightforward progression.

General style:

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear: Adhere to recommended page limits.

Mistakes to avoid:

- Insertion of a title at the foot of a page with subsequent text on the next page.
- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.
- Use paragraphs to split each significant point (excluding the abstract).
- Align the primary line of each section.
- Present your points in sound order.
- Use present tense to report well-accepted matters.
- Use past tense to describe specific results.
- Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
- Avoid use of extra pictures—include only those figures essential to presenting results.

Title page:

Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

Abstract: This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

An abstract is a brief, distinct paragraph summary of finished work or work in development. In a minute or less, a reviewer can be taught the foundation behind the study, common approaches to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Use comprehensive sentences, and do not sacrifice readability for brevity; you can maintain it succinctly by phrasing sentences so that they provide more than a lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study with the subsequent elements in any summary. Try to limit the initial two items to no more than one line each.

Reason for writing the article—theory, overall issue, purpose.

- Fundamental goal.
- To-the-point depiction of the research.
- Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

Approach:

- Single section and succinct.
- An outline of the job done is always written in past tense.
- Concentrate on shortening results—limit background information to a verdict or two.
- Exact spelling, clarity of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else.

Introduction:

The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.

The following approach can create a valuable beginning:

- Explain the value (significance) of the study.
- Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
- Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- Briefly explain the study's tentative purpose and how it meets the declared objectives.

Approach:

Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point for every section. If you make the four points listed above, you will need at least four paragraphs. Present surrounding information only when it is necessary to support a situation. The reviewer does not desire to read everything you know about a topic. Shape the theory specifically—do not take a broad view.

As always, give awareness to spelling, simplicity, and correctness of sentences and phrases.

Procedures (methods and materials):

This part is supposed to be the easiest to carve if you have good skills. A soundly written procedures segment allows a capable scientist to replicate your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order, but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt to give the least amount of information that would permit another capable scientist to replicate your outcome, but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section.

When a technique is used that has been well-described in another section, mention the specific item describing the way, but draw the basic principle while stating the situation. The purpose is to show all particular resources and broad procedures so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step-by-step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

Materials may be reported in part of a section or else they may be recognized along with your measures.

Methods:

- Report the method and not the particulars of each process that engaged the same methodology.
- Describe the method entirely.
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- Simplify—detail how procedures were completed, not how they were performed on a particular day.
- If well-known procedures were used, account for the procedure by name, possibly with a reference, and that's all.

Approach:

It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.

Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

What to keep away from:

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings—save it for the argument.
- Leave out information that is immaterial to a third party.

Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part as entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.

You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.

Content:

- Sum up your conclusions in text and demonstrate them, if suitable, with figures and tables.
- In the manuscript, explain each of your consequences, and point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation of an exacting study.
- Explain results of control experiments and give remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or manuscript.

What to stay away from:

- Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- Do not include raw data or intermediate calculations in a research manuscript.
- Do not present similar data more than once.
- A manuscript should complement any figures or tables, not duplicate information.
- Never confuse figures with tables—there is a difference.

Approach:

As always, use past tense when you submit your results, and put the whole thing in a reasonable order.

Put figures and tables, appropriately numbered, in order at the end of the report.

If you desire, you may place your figures and tables properly within the text of your results section.

Figures and tables:

If you put figures and tables at the end of some details, make certain that they are visibly distinguished from any attached appendix materials, such as raw facts. Whatever the position, each table must be titled, numbered one after the other, and include a heading. All figures and tables must be divided from the text.

Discussion:

The discussion is expected to be the trickiest segment to write. A lot of papers submitted to the journal are discarded based on problems with the discussion. There is no rule for how long an argument should be.

Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implications of the study. The purpose here is to offer an understanding of your results and support all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of results should be fully described.

Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact, you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved the prospect, and let it drop at that. Make a decision as to whether each premise is supported or discarded or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."

Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work.

- You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- Give details of all of your remarks as much as possible, focusing on mechanisms.
- Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
- One piece of research will not counter an overall question, so maintain the large picture in mind. Where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

When you refer to information, differentiate data generated by your own studies from other available information. Present work done by specific persons (including you) in past tense.

Describe generally acknowledged facts and main beliefs in present tense.

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	A-B	**C-D**	**E-F**
Abstract	Clear and concise with appropriate content, Correct format. 200 words or below	Unclear summary and no specific data, Incorrect form Above 200 words	No specific data with ambiguous information Above 250 words
Introduction	Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited	Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter	Out of place depth and content, hazy format
Methods and Procedures	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
Result	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
Discussion	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring

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