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Pharma, Drug Discovery, Toxicology and Medicine

Drug Therapy Problem

Analysis of Losartan Potassium

Highlights

Emergence of Allium Cepa

Ambulatory Hypertensive Patients

Discovering Thoughts, Inventing Future

VOLUME 15 ISSUE 4 VERSION 1.0

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Emergence of *Allium Cepa* as Antitubercular Agent

By Shashidhar Mehta, Sandhya S Mehta, Pankaj Patyal & Suhasini Bhatnagar

Mewar University, India

Abstract- Tuberculosis (TB) is the main cause of morbidity in modern era and a latent infection affecting nearly one third of world's population including forty percent from India. There is an urgent need to explore the effective and promising new anti– tubercular drugs to combat against Tuberculosis. Nature provides diverse secondary metabolites with anti- tubercular activity in medicinal plants. Among them Allium cepa (onion)., contains various constituents like quercetin, fructose, quercetin-3-glucoside, isorhamnetin-4-glucoside, xylose, galactose, glucose, mannose, organosulfur compounds, allylsulfides, flavonoids, flavenols, S-alk(en)yl cysteine sulfoxides, cycloalliin, selenium, thiosulfinates, and sulfur and seleno compounds that have proved to have protective role in tuberculosis. *Allium cepa* (onion) possesses antibiotic activity against both Gram-positive and Gram-negative bacteria and can be used to prevent tuberculosis most effectively.

GJMR-B Classification : NLMC Code: QV 4

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I. Introduction

Tuberculosis (TB) has emerged as one of the most serious and devastating that contributes the great loss of life and has been growing on pandemic rate. Medicinal plants have been used from long back the centuries and thus have shown very promising results. They have been used as pure as a raw material and thus have been elucidated. Out of the numerous plants, a small fraction has been screened out for their therapeutic efficacy. India has a rich culture with widespread use of herbal drugs for their elucidation of the mechanistic role that proves to be effective. The increase in the resistance of MDR and XDR further warrants the urge for the discovery of new drug that can be effectively screened out for the benefit of the mankind.

The issue of multidrug resistance has been increasing at an alarming rate. Mutation either at the genetic level or the transcriptional level leads to various deregulations that have been associated with the concept of multi drug resistance. The inculpation of the chemotherapy in the management of MDR-TB ensures the high risk of toxicity that is posing more dangerous to the mankind.

The second line drugs used to treat TB has been associated with great probability of drug resistance. This led to various devastations that further poses damage to the health of an individual. The WHO recommends the use of herbs in order to combat the various types of resistance so that therapeutic effect can be attained without compromising the quality of the life care of the patient. The worldwide research conducted on a number of plants gave very promising results and thus can be explored to attain the therapeutic benefits.

Allium cepa (onion) has been used in India from long centuries before and is almost exclusively used throughout the world. Research conducted on various studies suggest the ole of Allium cepa as antimicrobial, anti-cancer, antioxidant, antidiabetic, anti-hypercholestrolemic, anti hyperglycemic, anti mutagenic, cicatrizant effects, hemostatic, osteoclastic and anti- cardiovascular effects and thus gave very effective results. The effect of *Allium cepa* against gram positive and gram negative microorganisms like Escherichia, Salmonella, Staphylococcus, Streptococcus, Klebsiella, Proteus, Bacillus, clostridium, Helicobacter pylori and even acid-fast bacilli (AFB) have shown their utmost important role.

The use of onion as promising medicinal plants has been further demonstrated in various Ayurveda and Greek system of medicine. The presence of various constituents in the onion makes it an effective therapeutic target for a wide array of diseases. However, the much research has been further needed to exploit the further hidden mechanism and modulatory role of pathways by which *Allium cepa* shows the promising role.

The use of herbal drugs in India has been traced back long before the centuries and thus they have been used on a large demand. The use of MDR resistance has been growing and thus there is an urge for all the researchers to combat the disease by discovering new therapeutic targets. The various research has been carried through out the world to study the effect of *Allium cepa* to assess itsbeneficial role. The promising result given by *Allium sativum*necessitates the further exploitation of the effect of Allium cepa that can be extrapolated if possible for the benefit of mankind.

II. Pathophysiology of Tuberculosis

M. tuberculosis requires the presence of oxygen to grow. It does not require the presence of any bacteriological stain due to high lipid content in its wall,

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and thus is never considered as Gram-positive nor Gram-negative; hence Ziehl- Neelsen staining, or acid-fast staining, is used extensively and too a wide extent. The mycobacteria do not seem to fit the Gram-positive category from an empirical standpoint i.e., they do not retain the crystal violet stain, they are classified as acid-fast Gram-positive bacteria due to their lack of an outer cell membrane.

M. tuberculosis replicates in every 15–20 hours, which is extremely at a slow rate compared to other bacteria, which tend to have rapid division times measured in minutes. Specifically, M. tuberculosis blocks the bridging molecule, early endosomalautoantigen 1 (EEA1); however, this blockade does not prevent fusion of vesicles filled with nutrients. Consequently, the bacteria rapidly multiply unchecked within the macrophage. The bacteria also carried the UreC gene, which prevents the acidification of the phagosome. The bacteria also evade macrophage-killing by causing the neutralization of reactive nitrogen intermediates.

III. Promising Role of Herbal Drugs

Rifambicin, ethombutol, isoniazid and pyracinamide has been used as the current therapy for TB but the emergence of problem of multiple drug resistant (MDR) and (XDR) strains of mycobacterium is very used to with these drugs and poses a serious problem. The presence of "cross resistance" cause no single drug or combination therapy was able to control TB to a maximal account and such drug resistance is developed only against purified chemical compounds and has given successful results. The purified compounds cause the existence of resistance in pathogens and thus have proved to be effective against such diseases. Mycobacteriae are having self regulation to digest the drug by altering their receptor structure in response to the chemical structure of the drug. Thus the Mycobacteriae adapt at a very less rate and develop resistance against the new and modern drugs. The existence of herbal drug whether in the form of extract or decoction used against any pathogen will not cause the occurrence of drug resistance and thus can be eventually used in the therapy as an antitubercular drug. Hence an effective and appropriate drug therapy as an anti tuberculosis drug need to be evaluated and thus can be used to overcome the problem of cross resistance and can be used for the benefit.

IV. Discussion

The appearance of tuberculosis not only in India but in whole world is increasing at an alarming rate. The appearance of various resistant strains like MDR and XDR further mandates the exploration of new and promising therapy for the beneficial effect and in reducing the various mortalities and morbidities. Thus, urgent need of various studies are the need of the day to assess isolates/strains of M. tuberculosis as well as fractions of crude extract/ purified/semi-purified priniciple in order to evaluate their therapeutic role and thus serve the effect for the health status of the mankind.

V. Conclusion

The side effects associated with the allopathic drugs have remarkdly necessities the need of herbal drugs. The various side effects and serious morbidities associated with allopathic drugs further necessitates the need of the day to explore various effective and safe therapies that can be used as a promising agent . In the present review, authors have tried to make a complete description of allium cepa asantitubercular drugs around the globe. The various constituents present in plants makes them as an effective antitubercular drug. The discovery of new drugs has finally begin to emerge, the standard of care for tuberculosis might become possible soon Although the prevalence of TB in the society exists from long back centuries, still new and promising research needs to be evaluated out for the benefit of the society and improving the status of the healthcare.

References Références Referencias

1. Agarwal SP. Inter-sectoral cooperation for success of the RNTCP. Indian J Tuberc 2004; 51 : 59-62.
2. Singh MM. XDR-TB-Danger ahead Indian J Tuberc 2007; 54 : 1-2.
3. Heinrich M, Gibbons S. Ethnopharmacology in drug 3. discovery: an analysis of its role and potential contribution. J Pharm Pharmacol 2001; 53 : 425-32.
4. Gupta AK, Tandon N, editors. Reviews of Indian medicinal plants. New Delhi, India: Indian Council of Medical Research; 2004.
5. Sharma SK. Medicinal plants used in Ayurveda. New Delhi, India: National Academy of Ayurveda, Ministry of Health and Family Welfare, Government of India; 1998.
6. Gautam R, Saklani A, Jachak SM. Indian medicinal plants as a source of antimycobacterial agents. J Ethnopharmacol 2007; 110 : 200-34.
7. Newton SM, Lau C, Wright CW. A review of antimycobacterial natural products. Phytother Res 2000; 14 : 303-22.
8. Renu Gupta, Bandana Thakur, Pushpender Singh, H. B. Singh, V. D. Sharma, V. M. Katoch and S. V. S. Chauhan Anti-tuberculosis activity of selected medicinal plants against MDR-MTB isolates INDIAN J MED RES 131, June2010,pp809-813
9. Gupta KC, Chopra IC. Anti-tubercular action of Adhatodavasica (N.O. acanthacea). Indian J Med Res 1954; 42 : 355-8.

10. Jain RC. Antitubercular activity of garlic oil. Indian drugs 1993; 30 : 73-5.
11. Canetti G, Fox W, Khomenko A, Mahler HT, Menon NK, Mitchision DA, et al. Advances in techniques of testing mycobacterial drug sensitivity, and the use of sensitivity tests in tuberculosis control programmes. Bull World Health Organ 1969; 41 : 21-43.
12. Kent PT, Kubica GP. Antituberculosis chemotherapy and drug susceptibility testing in public health mycobacteriology: a guide for the level III laboratory. Atlanta GA: US Department of Health and Human Services, Centers for Disease Control and Prevention; 1985. p. 159-84.
13. Bemer P, Bodmer T, Munzinger J, Perrin M, Vincent V, 21. Drugeon H. Multicenter evaluation of the MB/BACT system for susceptibility testing of Mycobacterium tuberculosis. J Clin Microbiol 2004; 42 : 1030-4.
14. Werngren J, Klintz L, Hoffner SE. Evaluation of a novel kit for use with the BacT/ALERT 3D system for drug susceptibility testing of Mycobacterium tuberculosis. J Clin Microbiol 2006; 44 : 2130-2.
15. Lall N, Meyer JJ. In vitro inhibition of drug-resistant and drug-sensitive strains of Mycobacterium tuberculosis by ethnobotanically selected South African plants.
16. A.Shivakumar and Jayaraman, Anti-tuberculosis activity of commonly used medicinal plants of south India Journal of Medicinal Plants Research vol. 5 (31), pp. 6881-6884, 23 December, 2011.

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Characterization of Extract of P. Notatumisolated from Virgin Forest

By Adewole E, Idris O. O. & Olajuyigbe A.B

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Abstract- *Penicillium notatum* has been found years ago to be one of the leading novel candidates of fungi for the discovery of novel antibiotics. The fungus was isolated from eighty years old virgin forest Ikota, Ondo state. The fraction was obtained through column chromatography using mixture of solvents, after culturing and purification process of the extract. The fraction was characterized using gas chromatography mass spectrophotometer, the Gc-Ms results revealed Benzene, 1,2,4,5-trimethyl- having retention time 5.117,% of total 6.505%, p-cymene having retention time 5.170 minutes, % of total 16.439%, Trans-Decalin, 2 methyl with retention time 5.235 minutes and % of total 9.468 %, also n-Nonadecanol-1 having retention time 5.301 minutes and 13.302 %, Naphthalene with retention time 6.161 minutes, % of total 11.369 %, 5, 8,11,14-Eicosatetraenoic acid, methyl ester, having retention time of 6.381 minutes and % of total 2.544 %. Literature reports had indicated the physiological activities of these compounds and of interest p-cymene and Naphthalene derivative to possess strong pharmaceutical uses.

Keywords: *penicillium notatum, gas chromatography mass spectrophotometer, retention time, % of total.*

GJMR-B Classification : *NLMC Code: QV 252*

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I. Introduction

Fungi are rich sources of bioactive compounds. The medicinal chemists have always tried to design drug substance possessing maximum therapeutic application and minimum toxicity. Soil is traditionally the main source of fungal genetic resources for bio-prospection programs. To expand the search for pharmacologically active agent, soil sample from virgin forest of 80 years old in Ikota, Nigeria was examined.

II. Methodology

Figure 1: Showing the map of study area

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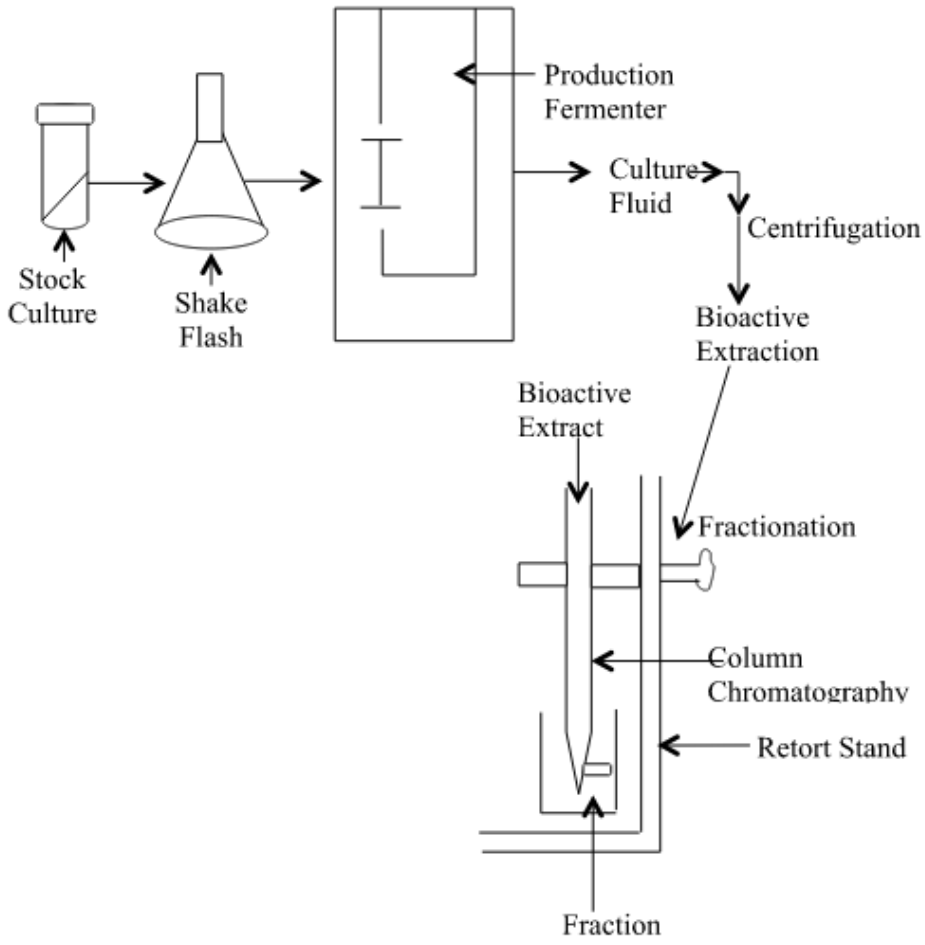


Figure 2 : Showing the flowsheet for the process

a) Soil sample collection

Soil sample collection was done in July 2013 in Ikota, Ondo State, Nigeria. Random sampling method was used in collecting soil sample directly and the collection was done using soil auger at a depth of 10cm. The collected soil was put into polythene bag and stored inside refrigerator.

b) Isolation of the fungi

One gram of soil sample was transferred to a sterile Erlenmeyer (EM) flask containing 50ml sterile water. The flask was shaken on rotary shaker for 30 minutes for the detachment of the spore chains. The flask was kept aside for 30 minutes to settle down the particulate matter. The clear supernatant was diluted with sterile water (dilutions 10^{-1} – 10^{-3}) was used on innocular. One ml of each of these dilutions was pipette out into the medium, plated into Petri dishes 6mm diameter and incubated at 28^{0}C for 2-4 weeks and potato dextrose agar was used.

c) Identification

Cultural observation: using the natural eyes and microscope at low power magnification (x40), parameters such as, colony color, color change in the medium, characteristic of the submerged hyphae whether rhizoid, spiral or regular and characteristic shape of mature fruiting bodies are strictly observed.

d) Microscopic observation

A small piece of mycelium free of medium was transferred using inoculating needle on to a glass slide containing a drop of cotton blue in loctophenol and the mycelium was spread properly with another needle. The preparation was covered with a cover slip and observed under medium power (x100) and later at high power (x400) magnifications. Details of spore colouration, shape, septation and surface marking were studied and *P. Notatum*was identified and confirmed by professor of microbiology in Microbiology laboratory.

e) Culturing the fungi

The fungi with strong antagonistic efficacy were culture in the laboratory for maximum yield of bioactive compounds using the fabricated fermenter, five ml of already cultured fungi was put into sterilized potato broth of 500ml and poured into the fermenter and allowed to excrete maximum yield for two weeks, the air pump supplied continuously sterilized air and the culture being mixed together using powered mixer.

f) Extraction and Purification

The fungi cultures were centrifuged and extraction of compounds from multiplied fungi was carried out in a separating funnel using ethyl acetate. The extract was concentrated using rotary evaporator. The fraction was eluted using mixture of 50% ethyl acetate and 50% hexane through column chromatography and the fractions was concentrated using rotary evaporator.

g) Gas Chromatography- Mass Spectrophotometer (GC-MS)

Analysis was conducted using an HP (Hewlett Packard, 5890 series И GC hyphenated with 5989 Mass Spectrometer). MS conditions were as follows: Detector mass spectrometer voltage 70eV and its source temperature was 300oC. The injector temperature was 240^{0}C and the split less mode 0.5µL injection. The HP 55% dimethyl-95% diphenylpolysiloxane non-polar column was performed with length 30 cm x 0.25 mm, coating thickness film 0.25 µm. The oven was adjusted at 100^{0}C for 1 min and initial time 1.5 min with 40^{0}C which ended by a final temperature of 300^{0}C and 4 min hold time where the total run time was 45 min. The components were identified by comparing their retention times with those of authentic samples, as well as by comparing their mass spectra with those of (NIST).

III. Results

Area Percent Report

Data Path : C:\msdchem\1\data\ADEWOLE.D\ADEWOLE, E\
Data File : AJIBOLA A1.D
Acq On : 10 Oct 2013 10:46
Operator : Ibitoye
Sample : AJIBOLA A1
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration Parameters: rteint.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 12 % of largest Peak
Start Thrs: 0.001 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 0

Method : C:\msdchem\1\data\ADEWOLE 1\ADEWOLE 3.D\FUNGI EXTRACT.M
Title :

Signal : TIC: AJIBOLA A1.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	5.117	3	5	10	rVB2	505342	608963	39.57%	6.505%
2	5.170	10	14	20	rVB	825111	1538826	100.00%	16.439%
3	5.235	20	25	30	rBV2	485960	886244	57.59%	9.468%
4	5.301	30	36	50	rVB7	243445	964358	62.67%	10.302%
5	5.461	50	63	67	rBV4	298830	870704	56.58%	9.302%
6	5.508	67	71	77	rBV3	305035	509795	33.13%	5.446%
7	5.633	89	92	99	rVB	236563	455632	29.61%	4.867%
8	5.710	99	105	111	rVB	358885	719703	46.77%	7.688%
9	5.971	138	149	157	rVB4	101928	355735	23.12%	3.800%
10	6.161	168	181	192	rVB2	369992	1064226	69.16%	11.369%
11	6.381	204	218	224	rVB8	63553	238098	15.47%	2.544%
12	6.826	287	293	308	rVB2	121041	317340	20.62%	3.390%
13	32.466	4596	4613	4636	rBV2	146500	605388	39.34%	6.467%
14	40.206	5900	5917	5928	rBV2	35362	225771	14.67%	2.412%

Sum of corrected areas: 9360783

FUNGI EXTRACT.M Thu Oct 10 11:52:13 2013

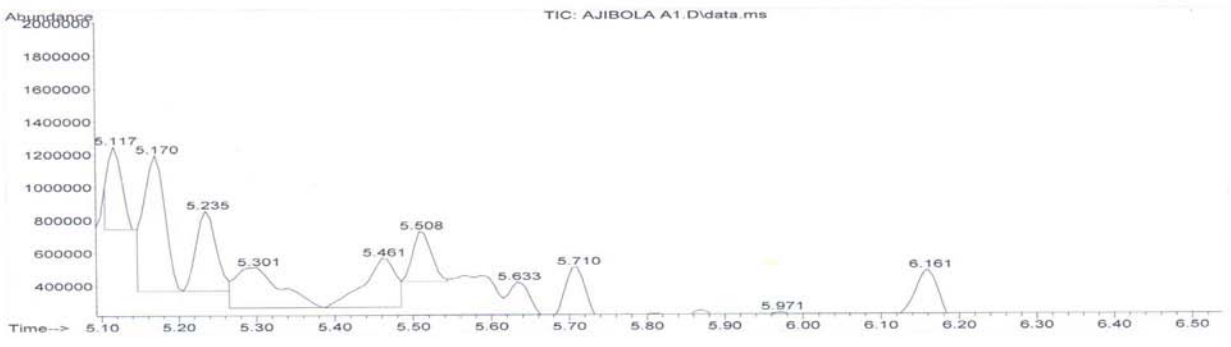


Figure 3 : Showing the chromatogram of the extract

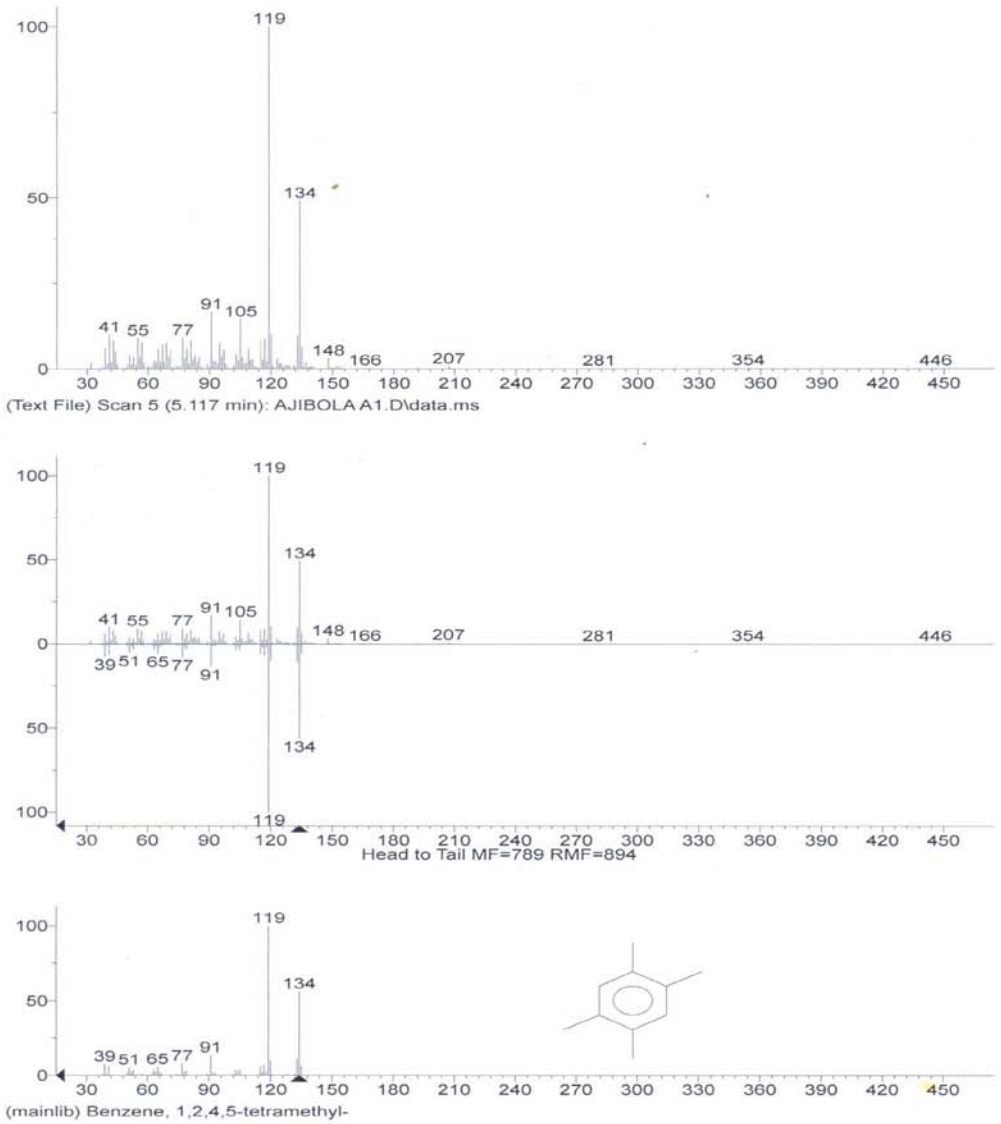
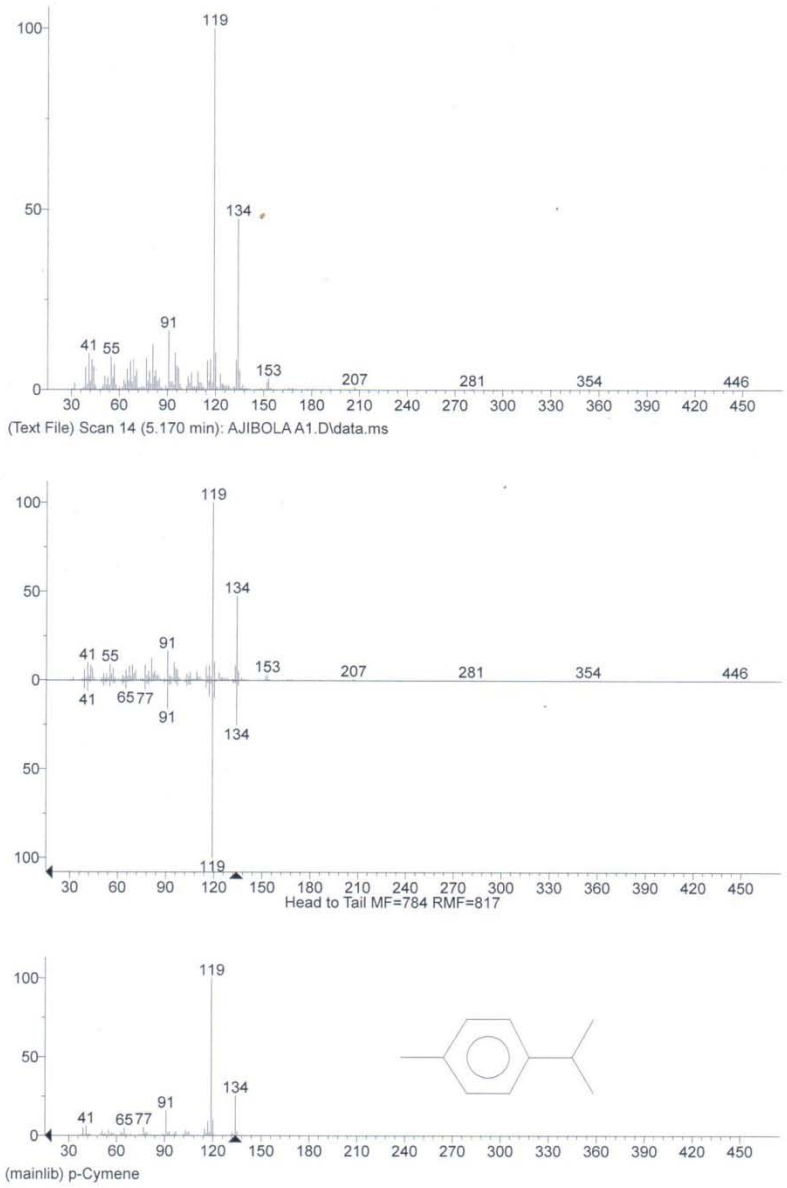


Figure 4 : Showing spectral of compound identified



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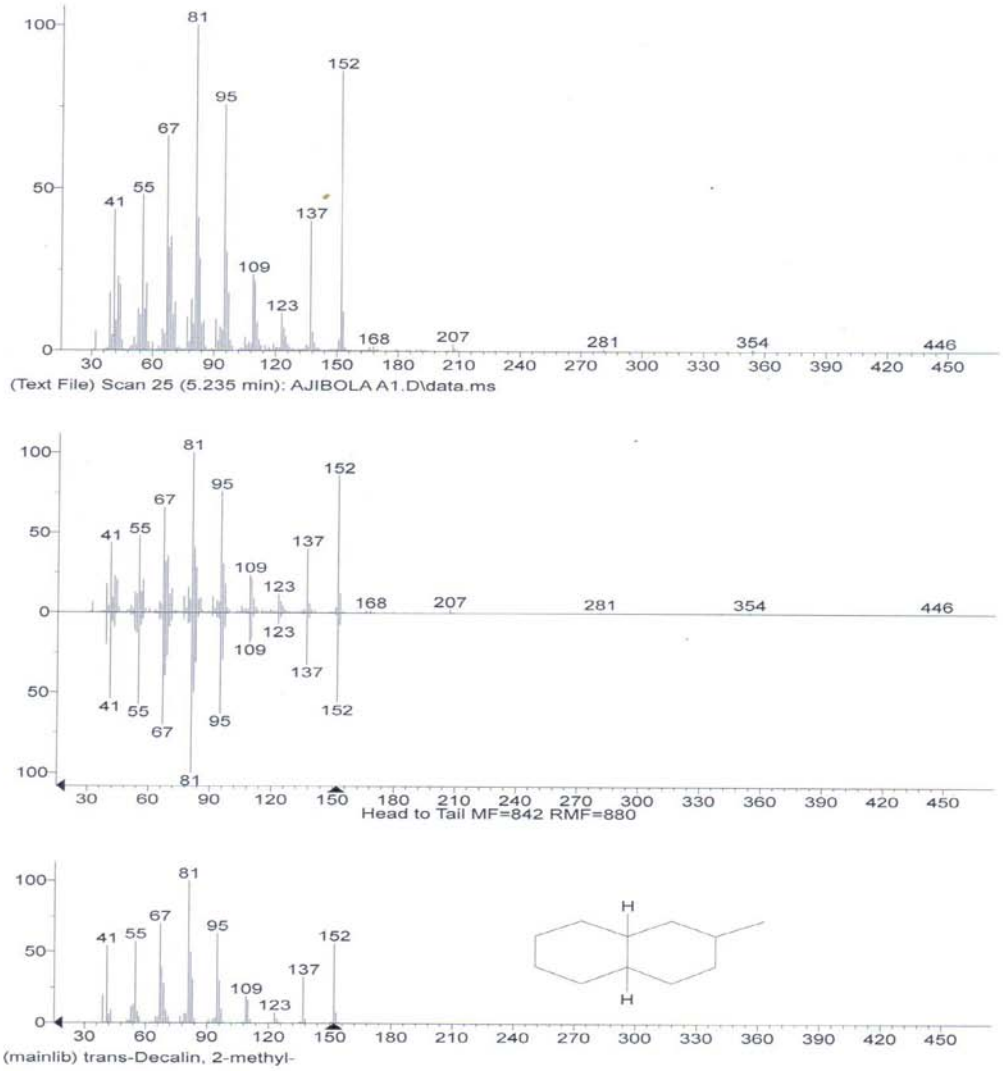

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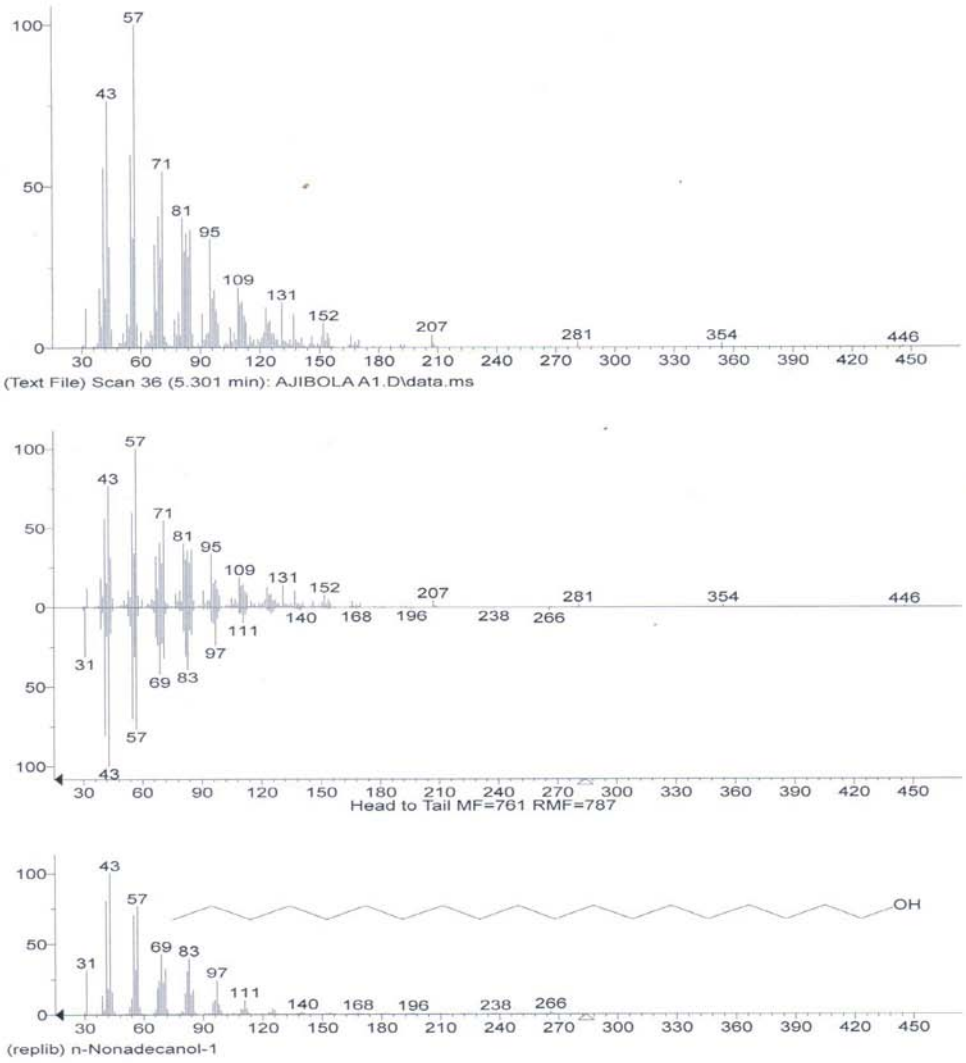

Figure 7 : Showing spectral of compound identified

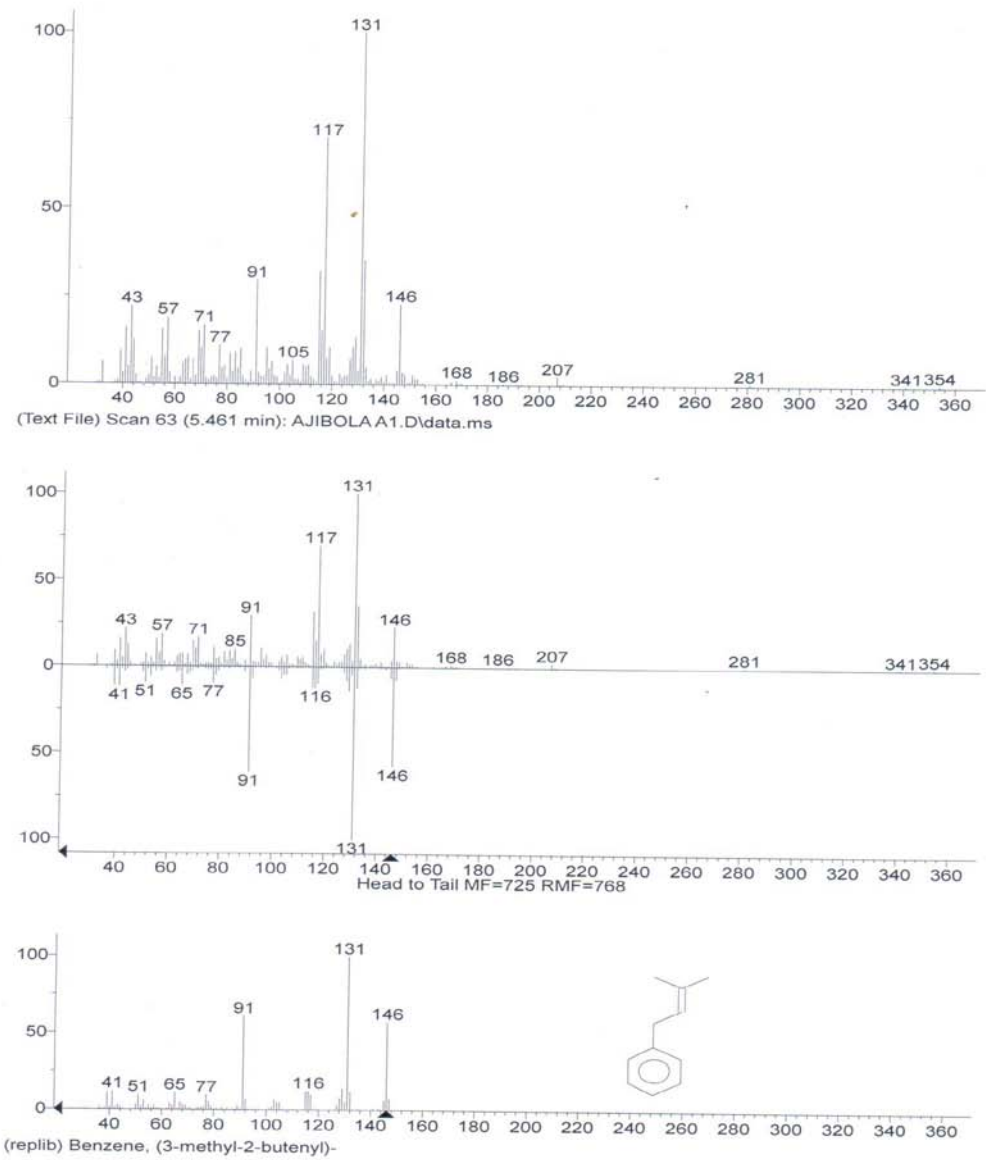

Figure 8 : Showing spectral of compound identified

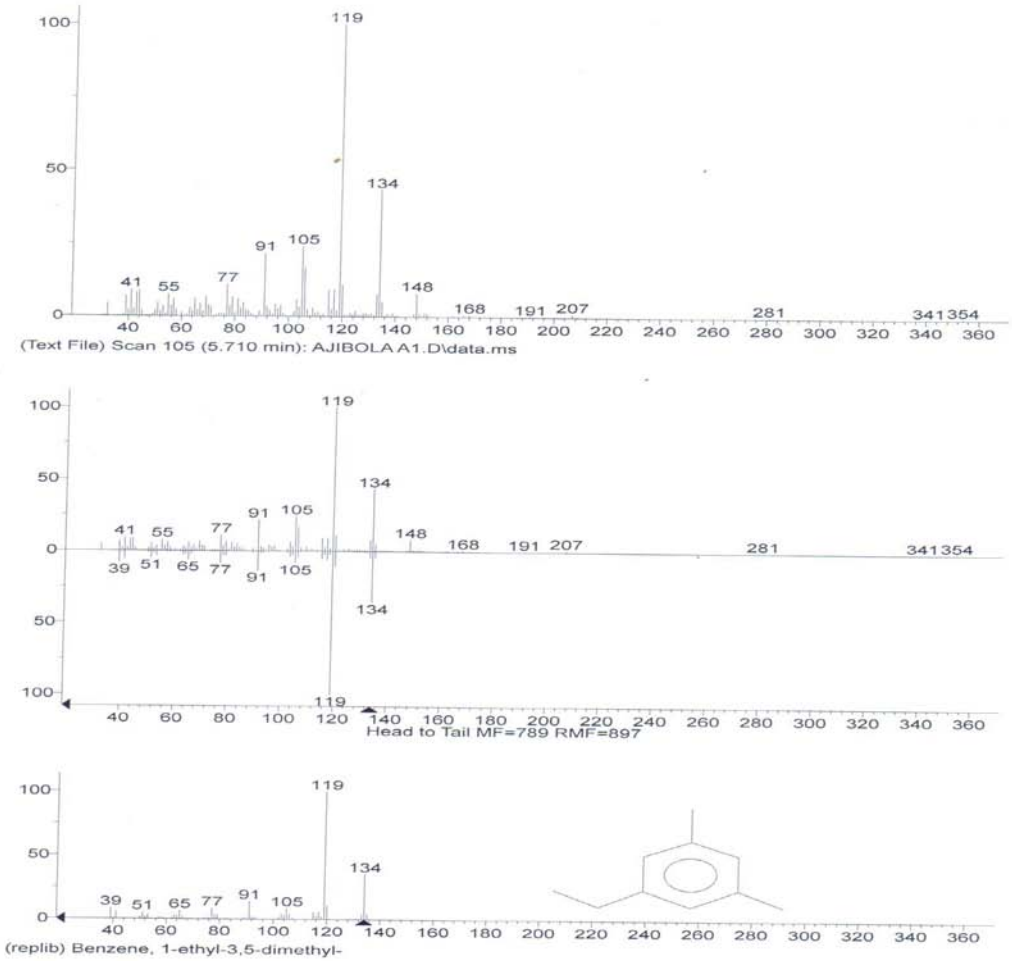

Figure 9 : Showing spectral of compound identified

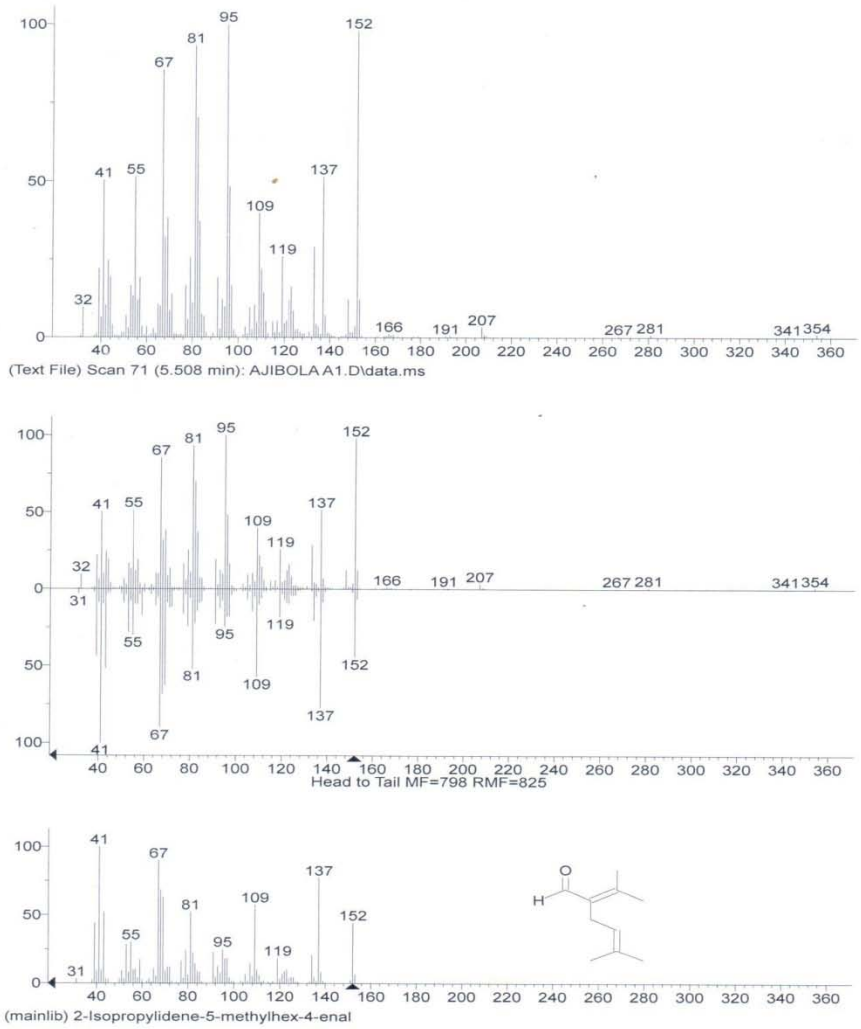

Figure 10 : Showing spectral of compound identified

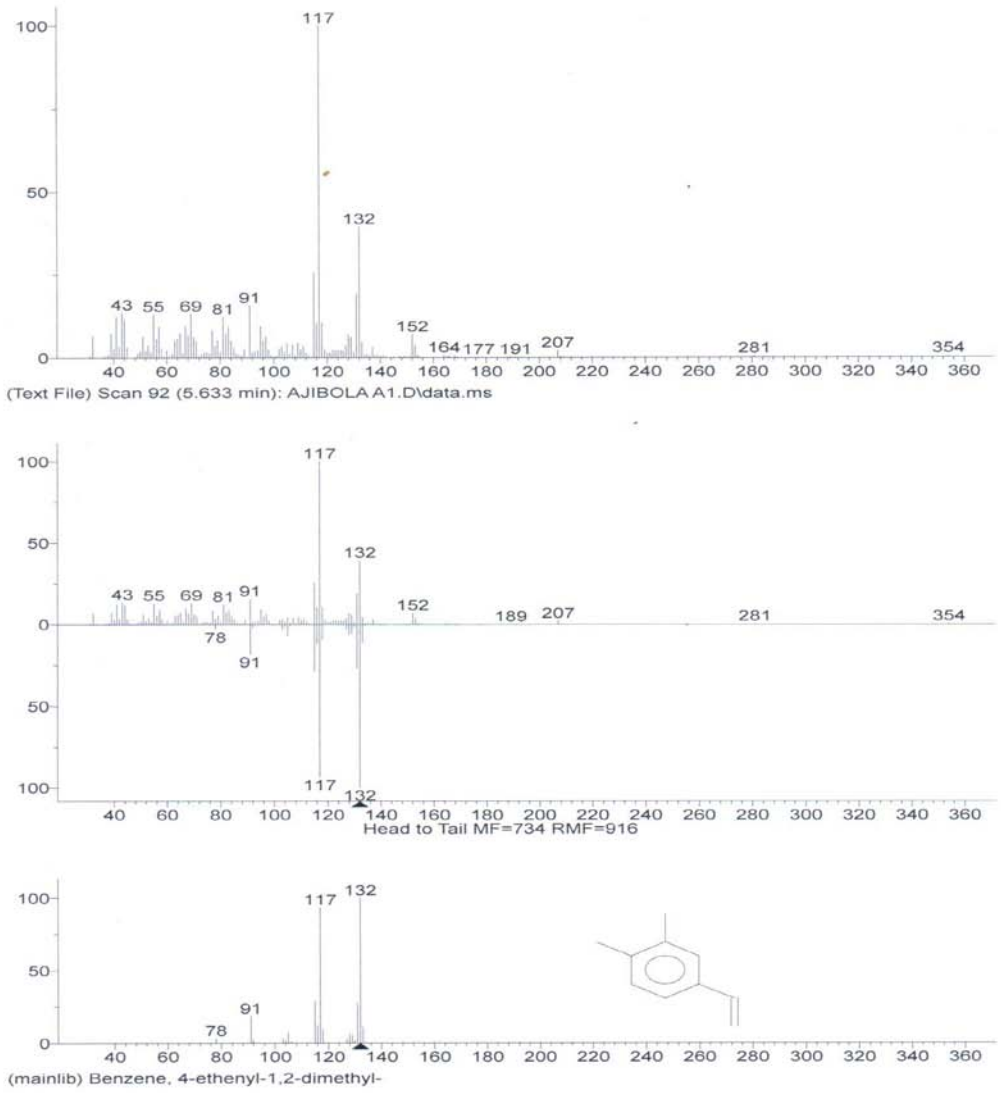

Figure 11: Showing spectral of compound identified

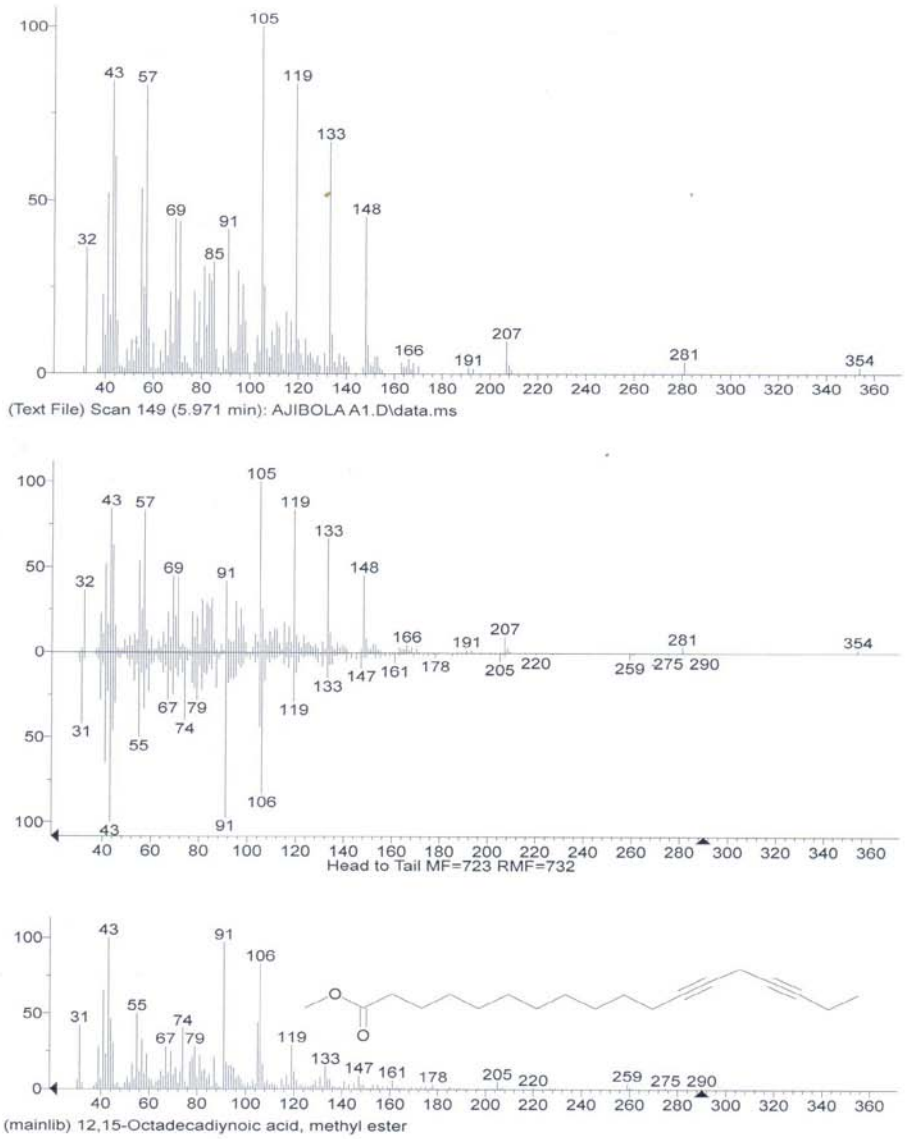

Figure 12 : Showing spectral of compound identified

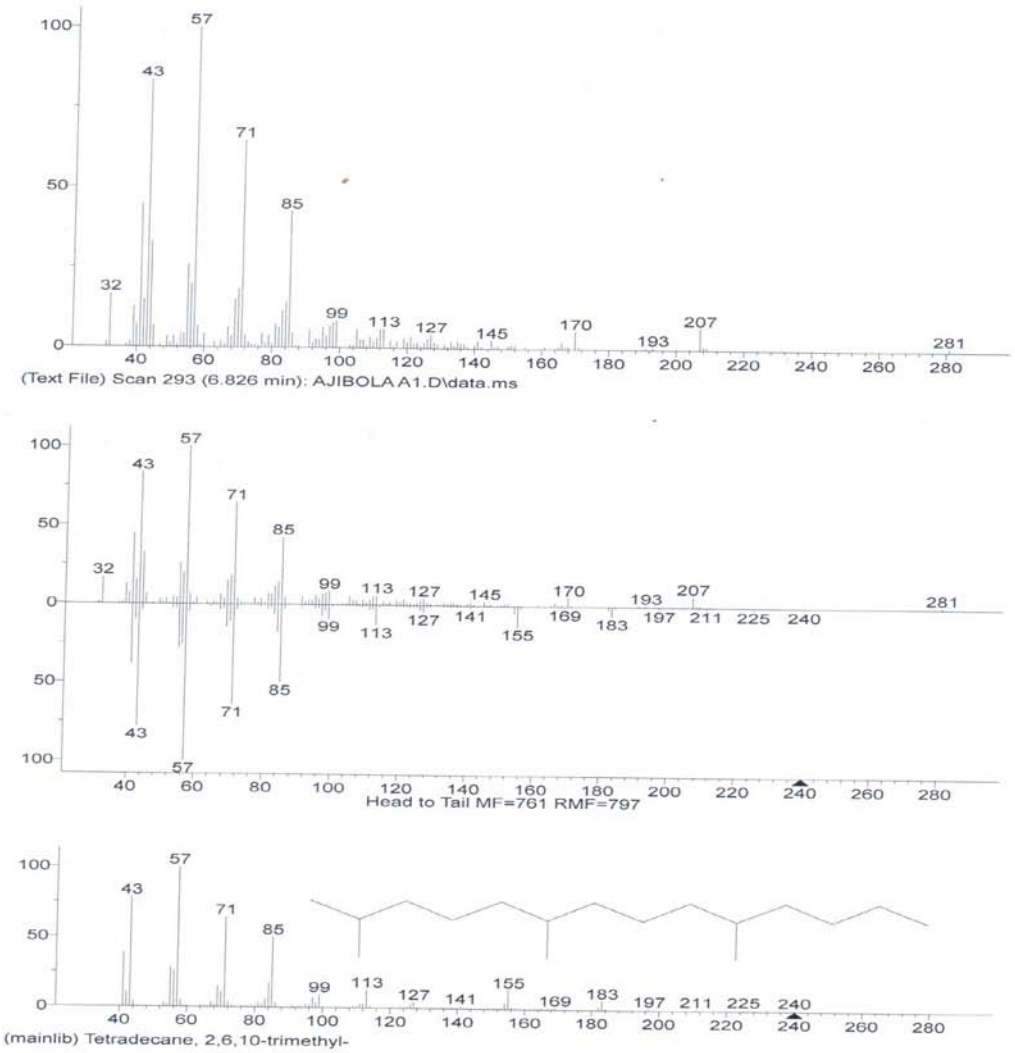

Figure 13 : Showing spectral of compound identified

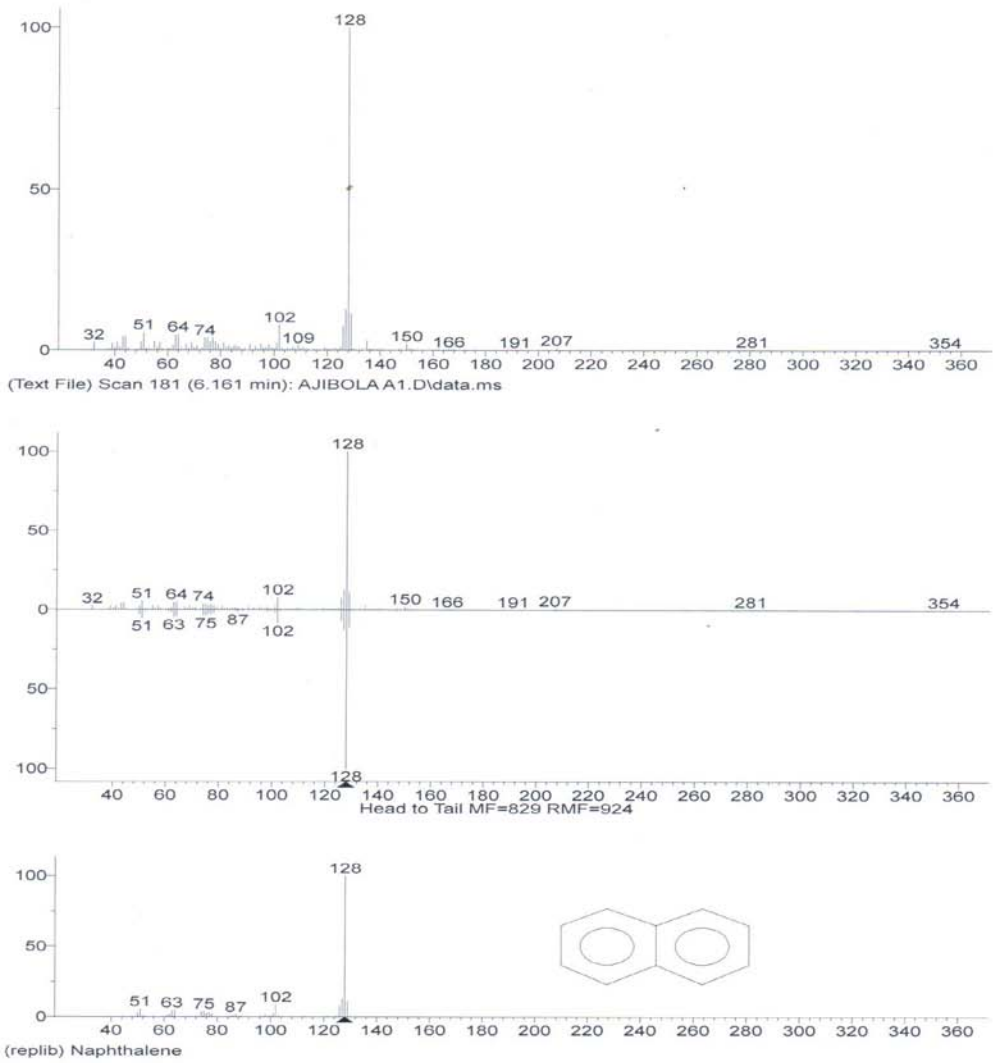

Figure 14 : Showing spectral of compound identified

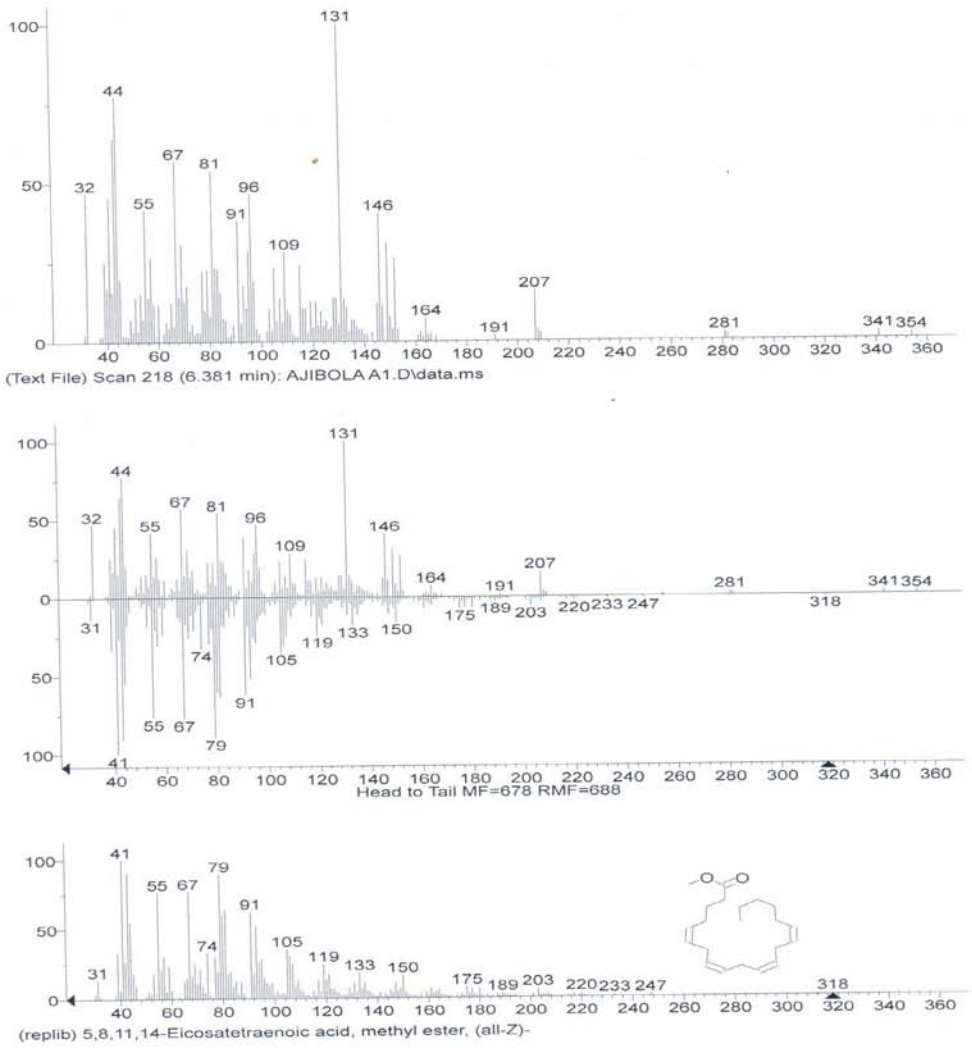

Figure 15 : Showing spectral of compound identified

IV. Discussion

Naphthalene having retention time 6.161 minutes, percentage total 11.369 %, was revealed. Naphthalene has been identified as new range of potent antimicrobials effective against wide range of human pathogens (Rokadeand Sayyed 2009). They occupy a central place among medicinally important compounds due to their diverse and interesting antibiotic properties.(Rokade andsayyed,2009}. Several naphthalene containing drugs are available, such as nafacillin, naftifine, tolnaftate, Also identified in the fraction was P-cymene having retention time of 5.170 minutes, percentage of total 16.439 % was revealed, this compound has just been patented and useful as nutraceutical composition for cognition -cognitive functions and psycho-social status, such as learning, memory and alertness, psychotic stability and maintenance (Ann, 2010). Benzene 1, 2, 4, 5-tetramethyl having retention time 5.117 minutes and percentage of total 6.505 % was identified. Many compounds that have benzene ring have been synthesized and possess strong pharmaceutical activities such as Aspirin, sulfanilamide, amphetamine, acetaminophen. 2-isopropylidene-5-methylhex-4-enal having retention time 5.508 minutes and percentage of total 5.446 %. From the figure 3 showing the chromatogram of the fraction, it is found that p-cymene having % of total 16.439% was the highest followed by Naphthalene of % total 11.369 %, n- Nonadecanol-1 of

% total 10.302 %. Understanding the biochemistry of alcohol metabolism has helped to develop treatments for alcohol abuse. For example, the drug Antabuse inhibits aldehyde dehydrogenase allowing a toxic accumulation of acetaldehyde to occur when alcohol is consumed(Brick, 2003; Brick and Erickson, 1999; Crews,2003; Pohorecky, L. and Brick).Trans-Decalin, 2-methyl of % total 9.468 %. These compounds have been found to have various pharmaceutical applications, this include as anagelsic, antimicrobial activities and as composition in the formulation of drugs and other industrial compounds.

V. Conclusion

From the above analysis, the fungus, P. Notatum has been found to be a reservoir of many bioactive compounds. if these compounds could be isolated and characterized using various spectroscopic techniques, novel and lead candidates compounds may be discovered.

References Références Referencias

1. Ann Fowler (Rheinfelden, CH) Regina Goralczyk, (Publication date: 2010-09-23) *Patent application number", 20100240768.*
2. Brick, J. **(2003)** The Characteristics of Alcohol: Chemistry, Use and Abuse, In: Brick, J. (Ed.), *Medical Consequences of Alcohol and Drug Abuse*. Haworth Medical Press, pp 1- 11
3. Brick, J., and Erickson, C. (1999) *Drugs, The Brain and Behavior: The Neuropharmacology of Abuse and Dependence.* Haworth Medical Press, New York.
4. Crews, F. (2003) The Effects of Alcohol Abuse on the Brain, In: Brick, J. (Ed.), *Medical Consequences of Alcohol and Drug Abuse*, Haworth Medical Press, pp 165-266.
5. Pohorecky, L. and Brick, J., Pharmacology of Alcohol. The Pharmacology of Ethanol, In: *International Encyclopedia of Pharmacological Therapeutics: Psychotropic Drugs ofAbuse*, Pergamon Press, pp. 189-254 1990.
6. Rokade , Y, B; Sayyed R. Z. (2009); Naphthalene derivatives; *rasayan journal of chemistry*, 2, **(4);** 972-980

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Drug Therapy Problem and Contributing Factors among Ambulatory Hypertensive Patients in Ambo General Hospital, West Shoa, Ethiopia

By Gobezie Temesgen Tegegne, Tezere Gaddisa, Belayneh Kefale, Gurumu Tesfaye, Jimma Likisa, Minyahil Albachew, Hunduma Dinsa & Amsalu Degu Defersha

Ambo University, Ethiopia

Abstract- *Background:* Hypertension is the most serious health problems in the world. Though modern medicine can improve the well-being, its benefit can be compromised by drugrelated problems (DTPs).

Objective: The objective of the study is to determine both type and number of drug related problems and factors affecting it in Ambo General Hospital.

Methods: A hospital based cross – sectional study was conducted. All patients who had contact time during the data collection were included. Trained data collectors collected the data.

Result and conclusion: A total of 151 ambulatory hypertensive patients were found during data collection period in Ambo general Hospital. A maximum of 200 drug therapy problems were found. The mean DTP was 1.32 + 0.47. The most common DTP was indication type problems. The maximum number of DTPs was three. None of the independent variable is associated with both presence and number of Drug Therapy Problem.

Keywords: *drug therapy problem, hypertension, indication.*

GJMR-B Classification : *NLMC Code: WB 330*

Strictly as per the compliance and regulations of:

Drug Therapy Problem and Contributing Factors among Ambulatory Hypertensive Patients in Ambo General Hospital, West Shoa, Ethiopia

Gobezie Temesgen Tegegne [α], Tezere Gaddisa [σ], Belayneh Kefale [ρ], Gurumu Tesfaye [ω], Jimma Likisa [¥], Minyahil Albachew [§], Hunduma Dinsa [χ] & Amsalu Degu Defersha [ν]

Abstract- Background: Hypertension is the most serious health problems in the world. Though modern medicine can improve the well-being, its benefit can be compromised by drug-related problems (DTPs).

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I. Introduction

Cardiovascular diseases (CVDs) remain the biggest cause of death world wide. WHO report (2011) estimated that 17.1 million people die of CVDs each year representing 30% of all deaths. By 2030, an estimated 23.6 million people will die from CVDs mainly from heart disease and stroke. These are projected to remain the single leading causes of death (1). According to the WHO, cardiovascular diseases will be the major cause for death and disability in India by 2020(2, 3, 4).

Hypertension (HTN) or high blood pressure, sometimes called arterial hypertension, is a chronic medical condition in which the blood pressure in the arteries is elevated. Blood pressure is summarized by two measurements, systolic and diastolic, which depend on whether the heart muscle is contracting (systole) or relaxed between beats (diastole). This equals the blood pressure at rest is within the range of 100-140mmHg systolic (top reading) and 60-90mmHg diastolic (bottom reading). High blood pressure is said to be present if it is often at or above 140/90 mmHg.

The Prevalence of hypertension was 19.04%. Given that the burden of CVD morbidity and mortality is projected to increase in developing countries, therefore it is essential to provide current reliable data on the epidemiology of hypertension.

The first lines of treatment for hypertension are preventive lifestyle changes include: dietary changes, physical exercise, and weight loss. These have all been shown to significantly reduce blood pressure in people with hypertension. If hypertension is high enough to justify immediate use of medications, lifestyle changes are still recommended in conjunction with medication. Therefore, more than one anti-hypertensives might be used. The most common class of anti-hypertensives are calcium channel blockers, angiotensin convertase enzyme blockers, diuretics and beta blockers.

Although pharmacotherapy in cardiovascular diseases can improve the well-being, its benefit can be compromised by drug-related problems (DTPs). A drug-related problem is any event or circumstance involving drug treatment that interferes with the outcome of medical care (5). They pose significant risk, leading to significant morbidity and mortality. Here in this study, type and number of drug therapy problems (DTP) and predictors for it will be assessed.

a) Statements of the problem

High blood pressure is widely prevalent in Addis Ababa and may represent a silent epidemic in this population. Overweight, obesity and physical inactivity are important determinants of high blood pressure. There is an urgent need for strategies and programs to prevent and control high blood pressure, and promote healthy lifestyle behaviors primarily among the urban populations of Ethiopia.

The burden of this disease is high encompassing economic, psychosocial, and, personal loss to self, family, or immediate community. The cost of illness may be reflected in absenteeism, low productivity, high cost for medical care, and low quality

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life. These resulted in negative outcome on the socioeconomic status of the country in general.

Hypertension is a risk factor for all clinical manifestations of atherosclerosis It is also an independent predisposing factor for heart failure, coronary artery disease, stroke, renal disease, and peripheral arterial disease. It is the most important risk factor for cardiovascular morbidity and mortality, in the world.

Many studies have proven the significance of pharmacists in identifying and resolving potential DTPs through timely interventions. Studies assessing the magnitude of DTPs in hospitalized patients and contributing factors are scarce in Ethiopia.

II. Significance of the Study

It would be much better to prevent drug related problems than to correct them, but this is not always possible because of the complexity of pharmaco-therapy. A more comprehensive study of DRPs in hospitalized patients should be done to provide valuable insights for the healthcare professionals to reduce the incidence of DRPs and the result can also be used as a base line information to establish, since it is an emerging concept on safe use of medication in the health care management.

III. Objectives

a) General Objectives

To determine presence of drug related problems among ambulatory hypertensive patient in Ambo General Hospital from April to May 2014.

b) Specific Objective

- To determine prevalence of DTPs among ambulatory hypertensive patient in Ambo general Hospital.
- To know type of DTPs
- To know number of DTPs per patient
- To determine factors affecting DTPs

IV. Materials and Methods

a) The Study area and period

This study was conducted from April to May 2014 in Ambo Hospital. This hospital is found in Ambo town Oromia regional state which is located at 114 km away from the capital city of Ethiopia Addis Abebe to the west. People around ambo zone use this general hospital. It has four major wards (internal medicine, gynecology, surgery, and pediatrics).

b) Study design

Descriptive Cross-sectional studies were conducted in Ambo General Hospital.

c) Study Population

All patients receiving anti-hypertensive drugs were included in the study.

i. *Inclusion criteria*

All People who receive anti-hypertensive drugs during the data collection period at the ambulatory ward

ii. *Exclusion criteria*

Patients those who are not willing to participate

d) Sample size and sampling technique

All patients who had visit during the data collection period were included. The sampling technique used was every other patient.

i. *Study Variable*

a. Dependent

Drug therapy problems

b. Independent

- ✓ Age
- ✓ Sex
- ✓ Number of drugs
- ✓ Co morbidity

e) Data collection procedures

The structured questionnaires were used. It contains socio-demographic characteristics, medical and drug condition. The trained data collectors were used to collect the data from patient card and patient him/herself during data collection period.

i. *Data Analysis*

All data were cleaned, coded and entered in SPSS version 20. Descriptive, logistic and leaner regressions were used. $P < 0.05$ is considered to be significant.

f) Ethical consideration

Formal letter was obtained from Research Ethics Committee of Ambo University and submitted to Ambo General Hospital, so the letter was given to the hospitals and they allowed us to do the research. Written consent was taken so that the patient was willing to give his/her medical information.

g) Operational definition

Drug therapy problem: involves indication, safety and effectiveness related problem.

V. Results

a) Socio demographic characteristics

A total of 151 patients were encountered during data collection period. 63 (41.7%) of them were males. 82(54.3%) and 41(27.15%) were treated by double and triple therapy respectively.

Table 1: Socio demographic characteristics of ambulatory hypertensive patient in Ambo General Hospital from April to May 2014. (Logistic)

No	Variables		Frequency (%)	P	AOR	CI (95%)	
						L	U
1	Sex	M	63 (41.7)		1	1	1
		F	88 (58.3)	.395	1.380	.657	2.899
2	Age	<17	0(0)				
		<17-59	108(71.5)	.231	.612	.274	1.367
		> 60	43(28.5)				
3	Number of medication	>3	99 (65.56)	.462	.511	.085	3.054
		<=3	52 (34.44)				
	Number of medication	1	17(11.5)	.629	1.884	.144	24.670
		2	82(54.3)	.891	1.179	.114	12.238
		3	41(27.2)	.812	1.232	.221	6.866
		>3	11(7.28)				

b) Blood pressure measurement

The mean systolic and diastolic blood pressure was 134.67 ± 18.24 and 85. 56 ± 10.75 mm Hg respectively.

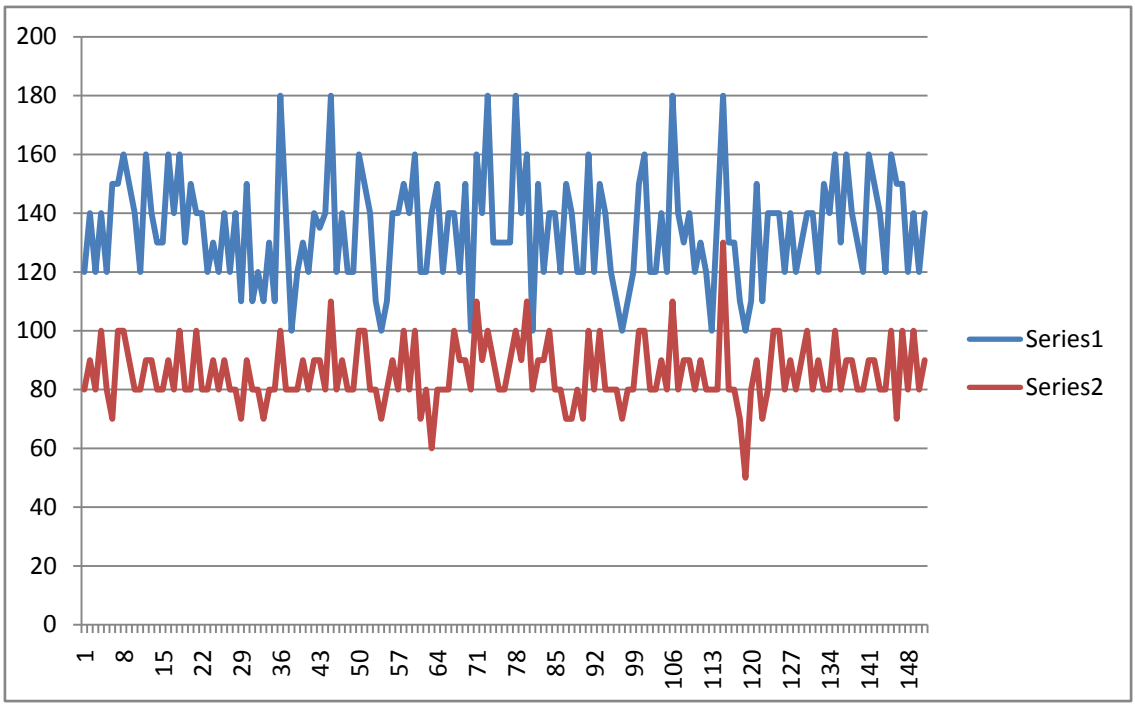

Figure 1: Blood Pressure of each hypertensive patient in ambulatory ward of Ambo General Hospital from April to May 2014

Key
Series 1= systolic blood pressure
Series 2=Diastolic blood pressure

c) Types of medication

From the recommended drugs Hydrchlothiazid (108(71.5%)), Nifidipne (87(57%)), and Enalapril (66(43.7%)) were the commonly used drugs.

d) Drug therapy problems

The mean of drug therapy problems is 1.32 ± 0.47 and the total numbers of drug therapy problems were 200. Most patients had one drug therapy problem. The most common DTP was indication related problem.

Table 2 : Type of Drug therapy problems among ambulatory hypertensive patients in Ambo General Hospital from April to May 2014

Drug therapy problems involved		Reasons	Number of patient (%)
Indication	Unnecessary drug therapy	No medical condition	-
		Duplicate therapy	37(24.5)
		Non-drug therapy indicated	-
		Treating avoidable ADR	-
		Addictive or Recreational drugs	-
	Needs additional drug therapy	Untreated indication	24(15.89)
		Preventive or prophylactic	-
		Synergistic or potentiating	-
Effectiveness	Needs different drug product	More effective drug available	7(4.64)
		Condition refractory to drugs	-
		Dosage form inappropriate	-
		Not effective for condition	11(7.23)
	Dosage too low	Wrong dose	-
		Frequency inappropriate	-
		Drug interaction	-
		Duration inappropriate	24(15.89)
Safety	Adverse drug reaction	Undesirable effect	15(9.93)
		Unsafe drug for patient	-
		Drug interaction	-
		Dosage administered or changed too rapidly	-
		Allergic reactions	-
		Contraindication present	-
	Dosage too high	Wrong dose	-
		Frequency inappropriate	-
		Dose too high	-
		Duration inappropriate	
		Drug interaction	-
		Incorrect administration	-

e) Factors Affecting Drug Therapy Problems

Age (p = 0.231), sex (p= 0.395), and number of medication (p=0.085) were not associated with presence of Drug Therapy Problem.

Sex (p=0.232), age (p=0.45), and number of medication (p= 0.724) were not associated with number of DTPs.

VI. Discussion

Most hypertensive patients had DTP, which is consistent with the study done on Felege Hiwot referral Hospital. There were 200 numbers of DTPs, on the other hand relatively lesser number of DTPs (105) was found in the study done in Felege Hiwot referral Hospital. [6, 9]

The number of DTP per patient was 1.32 $\pm$ 0.47, while study in Jimma showed it was 1.8 $\pm$ 0.8, relatively higher. This might be due to the fact that the study in JUSH includes all medical patients.[9]

The most common DTP was indication problem, which is similar to study done in Felege Hiwot referral Hospital while different from study done in India [7, 9, 10, 11]. Of the total type of Drug therapy problems, most frequently found was unnecessary drug therapy (24.5%) and need for additional (31, 20.53%). On the other hand the study done in India showed, dose-related problems (35.1%) followed by need for additional drugs (19.7%), and unnecessary drugs (16.7%) were the common DTP.[7, 9]

In this study, age (p = 0.231), sex (p= 0.395), and number of medication (p=0.085) were not associated with presence of Drug Therapy Problem. Sex (p=0.232), age (p=0.45), and number of medication (p= 0.724) were not associated with number of DTPs. On the other hand the study done in India showed age and number of DTP had significant association, these might be due to here in this study there were lesser number of patients with co-morbidities. [7]

VII. Conclusion

High proportion of patients in Ambo General Hospital had DTPs. The most common DTP was indication type problems. The maximum number of DTPs was three. Age, sex, and number of medication were not associated with presence of Drug Therapy

Problem, as well as sex, age, and number of medication were not associated with number of DTPs.

VIII. Recommendation

The following recommendations are forwarded:

Ambo general hospital: to develop team work among health care professionals.

Ambo general hospital pharmacists: to strengthen pharmaceutical care

Ambo general hospital physician: to stick them selves to the current guideline

IX. Acknowledgement

We are very grateful to our college staff members for their constructive suggestions starting from the stage of proposal development. Finally our deepest gratitude goes to Ambo General Hospital staff workers who helped and allowed us in collecting and gathering data from the hospital. Finally we thank all hypertensive patients in Ambo General Hospital.

Conflict of interest

The author(s) declare(s) that there is no conflict of interests regarding the publication of this manuscript.

References Références Referencias

1. World Health Organization. Cardiovascular diseases fact sheet [Online]. Available from http://www.who.int/mediacentre/factsheets/fs317/en/index.html [Accessed on August 18 2011].
2. World Health Organization. The World Health Report 2002. Geneva, Switzerland:WHO, 2002.
3. Burden of disease in India, Background papers for the National Commission on Macroeconomics. New Delhi: Ministry of Health and Family Welfare, Government of India; 2005
4. Rodgers A, Lawes C, MacMahon S. Reducing the global burden of blood pressure related cardiovascular disease. J Hypertens 2000; 18:S3-6.
5. Ramesh M. Drug therapy review. In, Parthasarathi G., Karin Nyfort-Hansen, Milap C Nahata (ed). A Textbook of Pharmacy Practice. 1st edition. Madras: Orient Longman Private Limited; 2004. 218- 236.
6. Blix HS, Viktil KK, Reikvam A, Moger TA. A Majority of hospitalized patients have drug related problems: Results from a prospective study in general hospitals. Eur J ClinPharmacol 2004; 60:651-58.
7. Nascimento Y, Carvalho WS, Acurcio FA. Drug-related problems observed in a pharmaceutical care service, Belo Horizonte, Brazil. Brazilian Journal of Pharmaceutical Sciences 2009; 45(2):322-422.
8. Van Mil JF, WesterlundLT, Hersberger KE, Schaefer MA. Drug-related problem classification systems. Ann Pharmacother 2004;38 (5):859–67.
9. Gobezie Temesgen Tegegne, Belayneh Kefale Gelaw, Amsalu Degu Defersha, Belay Yimam, Elias Ali Yesuf. Drug Therapy Problem Among Patients With Cardiovascular Diseases In Felege Hiwot Referral Hospital, North East, Bahir Dar Ethiopia: *Indo American Journal of Pharm Research. 2014: 4 (06)*
10. Alemayehu B. Mekonnen, Elias A. Yesuf, Peggy S. Odegard, Sultan S. Wega. Implementing ward based clinical pharmacy services in an Ethiopian University Hospital: Pharmacy Practice 2013 Jan-Mar; 11(1): 51-57.
11. Bereket Molla Tigabu, Danie Daba and Belete Habte. Factors Associated With Unnecessary Drug Therapy And Inappropriate Dosage In Jimma University Specialised Hospital, South West Ethiopia: World J Pharm Sci 2013; 1(4): 93-98

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Prescription Pattern of Injection at Out Patient Pharmacy Department of Adama Hospital Medical College, Adama, Ethiopia

By Belayneh Kefal Gelaw, Adunya Feyissa, Gobezie Temasgen Tegegne, Amsalu Degu Defersha, & Getasew Amogne Ayinalem

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Abstract- *Introduction:* Injection is an infusion method of putting drugs or fluids in to the body with a hollow needle and a syringe. The use of injection for treatment accompanied with variety of disadvantages including sepsis at administration, risk of tissue toxicity, costly difficulties in correcting the error. Injections are very expensive compared to other dosage forms and require trained personnel for administration. Moreover, unhygienic use of injections can increase the risk of transmission of potentially serious pathogens, such as hepatitis, HIV/AIDS, and blood-borne diseases. It is estimated by the WHO that about 16 billion injections are undertaken in developing countries annually and are often irrationally used.

Objective: The present study was aimed to assess the prescription pattern of injections in Adama Hospital Medical College.

Method: Hospital based Prospective cross sectional study was done to assess prescription pattern of injections in outpatient pharmacy of AHMC. All Prescription cards from March 24, 2015 to May 24, 2015 were taken and reviewed using pretested data collection format. Finally data was edited, coded, tallied and cleaned. Descriptive statistics was computed.

Key Terms: *injection medicine, prescribing pattern, prescribers, prescription, adama.*

GJMR-B Classification : *NLMC Code: QV 701*

Strictly as per the compliance and regulations of:

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Abstracts- Introduction: Injection is an infusion method of putting drugs or fluids in to the body with a hollow needle and a syringe. The use of injection for treatment accompanied with variety of disadvantages including sepsis at administration, risk of tissue toxicity, costly difficulties in correcting the error. Injections are very expensive compared to other dosage forms and require trained personnel for administration. Moreover, unhygienic use of injections can increase the risk of transmission of potentially serious pathogens, such as hepatitis, HIV/AIDS, and blood-borne diseases. It is estimated by the WHO that about 16 billion injections are undertaken in developing countries annually and are often irrationally used.

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Result: On review of 500 prescription papers, 600 injections were prescribed. The percentage of prescriptions containing name of the patient, sex, age, address, date and card number were 490 (98%), 395 (79%), 405 (81%), 250 (50%), 300 (60%) and 480 (96%) respectively. The most commonly prescribed therapeutic class was inject able antibiotics 154 (25%), anti pains 120 (20%) and diuretics 66 (11%). Injections prescribed with over, under and optimum dose were 15 (2.5%), 9 (1.5%), 576(96%), respectively. About 18 (3%), 6 (1%) and 2 (0.3%) of antibiotics were prescribed by incorrect frequency, short and extended duration of administration, respectively. Only on 190 (38%), 65 (13%) and 480 (96%) of prescription papers were names, qualification and signature of the prescribers specified respectively.

Conclusion: There was rational use of injections in the hospital though there are some problems that have to be considered.

Key Terms: injection medicine, prescribing pattern, prescribers, prescription, adama.

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I. Introduction

a) Background

Injection is an infusion method of administering drugs or fluids into the body with a hollow needle and a syringe. The uses of injectable drugs have many disadvantages including sepsis at administration, risk of tissue toxicity, costly difficulties in correcting the error. Injections are very expensive compared to other dosage forms and require skilled personnel for administration. Apart from this, unhygienic use of injections can enhance the hazard of transmission of potentially serious pathogens, such as hepatitis, HIV/AIDS, and blood-borne diseases [1]. According to WHO report about 16 billion injections are undertaken in developing countries annually [2].

Injectable drugs are often irrationally used. Use of Drugs involves the prescribing, dispensing and the interaction between the prescriber and the patient. These behaviors include the process of making a diagnosis, prescribing, dispensing, and use of drugs by the patient [3].

According to World Health Organization (WHO) definition the rational use of injectable drugs requires that patient receive the right medications at the right dose, right frequency and duration of therapy and in the lowest cost that could be afford by them and their community. Rational use of drugs is also one indispensible element in achieving quality of health and medical care for patients and the community as a whole [5].

According to a study done in the northern, central, eastern, western and southern areas of Tehran in 1999, the average prescription injectbable drugs for each encounter was equivalent to 3.6 which 39% of it consisted of injection medicines [6]. Another study conducted in Tehran revealed that the average prescribed items were equivalent to 2.85 and at least one injection item was among 28.96% of them [7].

Rational prescription could be achieved if the prescribers have access to an essential drugs list and the essential drugs are available on a regular basis. In the absence of such facility-related factors, the risk of irrational prescribing could raise several folds. Irrational

use of drugs is presently a major health problem in medical practice whose consequences include ineffective treatment, unnecessary prescription of drugs particularly antimicrobials and injections, development of resistance to antibiotics, adverse effects and economic burden on both patients and society. It has been estimated that 50% or more expenditure on medicines is being wasted through irrational prescribing, dispensing and usage [8].

b) Statement of the Problem

Globally, it is anticipated that more than 30% of injections prescribed, dispensed or sold improperly. Irrational use of injection has been found to be a frequent problem in various parts of the world, especially in developing countries. Irrational prescription of injection medicines is also one of the common problems of medical treatments in developing countries [2]. Nonetheless, overuse of injection medicines is an additional current health problem in developing countries, On top of this, the practice of irrational prescribing is a global major problem of health care delivery. However, this problem is most commonly pronounced in developing countries where health budgets are small and 30 – 40 % of the total health budget is spent on drugs [8].

Prescription of injectable drugs carries all necessary information, such as name, age, and address of the patient together with a brief diagnosis of the condition targeted by the drug treatment. However, most prescription did not contain this information [9]

c) Significance of the study

- Most prescription of injectable drugs do not full fill the requirement information on the prescription paper such as patient related information, drug related information and prescriber related information. The finding of this study would enable to improve such problems and to fill the gap that observed on the prescription pattern of inject able drugs.
- The data regarding pattern of injection use in the AHMC is still lacking or scarce. This study is thus initiated to fill such information gaps by determining the pattern of injection use in the hospital.
- This study will also provide a base line data for policy makers and also initiate other researchers on this topic.

II. Objective

a) General objective

- To assess prescription pattern of injectable drugs in AHMC.

b) Specific objective

- To assess the percentage of injectable drugs per prescription
- To determine the percentage of injections prescribed by generic name per encounter.
- To determine the type of drugs commonly prescribed.

III. Methods and Materials

a) Study area

Adama Hospital Medical College is located in the Middle East Ethiopia, Oromia Regional state, in Adama town 99km from Addis Ababa to the South East. It was established in 1946 by Italian missionaries. The hospital was named as Hailemariam Mamo memorial hospital little bit after establishment, but its name was changed to Adama Referral Hospital in mean time and now it renamed as Adama Hospital Medical College by Oromia regional state health bureau after it start to teach accelerated medicine, Emergency surgery and some Specialty in 2011.AHMC is one of the hospital that serve large size of population from middle east and southern Oromia, Afar, Somali, Southern Nation, Nationalities and peoples(SNNP) and even some parts of Amhara region. Currently the college hospital has catchment population of about 5 million serving as referral hospital for all nearby hospitals and the adjacent regions. It has capacity of 200 beds for inpatient with five disciplines (Surgery, Internal medicine, pediatrics, Gynecology/ Obstetrics and ophthalmology) with four pharmacies (OPD, ward, emergency and ART pharmacy) and serves about 850 patients per day at OPD during working hours and on average 52 patients per day after working time in private wing clinic. The hospital has about 465 workers of which 257 were health professionals and the remaining are administrative workers and teachers. The hospital is now working in collaboration with Adama General Hospital and Medical College (AGHMC)

b) Study period

- Study was conducted from March 24, 2015 to May 24, 2015.

c) Study design

- A prospective cross sectional study was done to assess prescription pattern.

d) Source population and Study population

i. *Source population*

- All available prescription in the outpatient Pharmacy department during the study period.

ii. *Study population*

- All prescription containing injectable drugs during the study period.

e) Inclusion and exclusion criteria

i. *Inclusion criteria*

- All prescription containing injectable drugs.

ii. *Exclusion criteria*

- ❖ Those prescriptions containing drugs which were not clear to read.
- ❖ Prescriptions from other health settings dispensed in the hospital.
- ❖ Prescriptions containing only medical supplies such as syringe, needle and catheter.

f) Sampling size

- ➢ A total of 500 encounters containing injectable drugs were successfully evaluated during the study period.

g) Measurements

i. *Dependent variables*

- ❖ Number of injectable drugs per prescription
- ❖ Number of injectable drugs prescribed by generic name
- ❖ Prescription pattern of injectable drugs

ii. *Independent variables*

- ➢ Socio demographic characteristics

h) Data collection process

The data was collected by four trained data collectors (pharmacy Graduating class students) using pretested data collection formats. Data was collected from the prescription paper. The collected data was checked for completeness and consistency before processing.

i) Data quality control

The quality and completeness of the data was checked by the principal investigator. Pretest was performed as a part of training and the data collectors were guided by the investigators.

j) Data processing and data analyzing

Data were complied, analyzed and summarized then interpreted by using tables or graphs.

The collected data were carefully analyzed by using calculator manually.

k) Ethical approval

Ethical clearance was obtained from Ethical Review Board of College of Medicine and Health Sciences of Ambo University to conduct this study.

l) Operational Definitions

- ➢ *Prescriber:* Any medical practitioner who is authorized/licensed to write prescription.
- ➢ *Injectable drugs:* Are drugs which were administered parenteral route.
- ➢ *Prescription:* Is a written form of communication between any authorized body and pharmacists to dispense drugs.
- ➢ *Poly pharmacy:* Is when the prescription contains three or more drugs at once.
- ➢ *Injection:* Is an infusion method of putting drugs or fluids in to the body with a hollow needle and a syringe.

IV. Results

a) Patient related information

During the study period five hundred (500) encounters were successfully evaluated. The percentage of prescriptions containing name of the patient, sex, age, address, date and card number were 490 (98%), 395 (79%), 405 (81%), 250 (50%), 300 (60%) and 480 (96%) respectively (Figure 1).

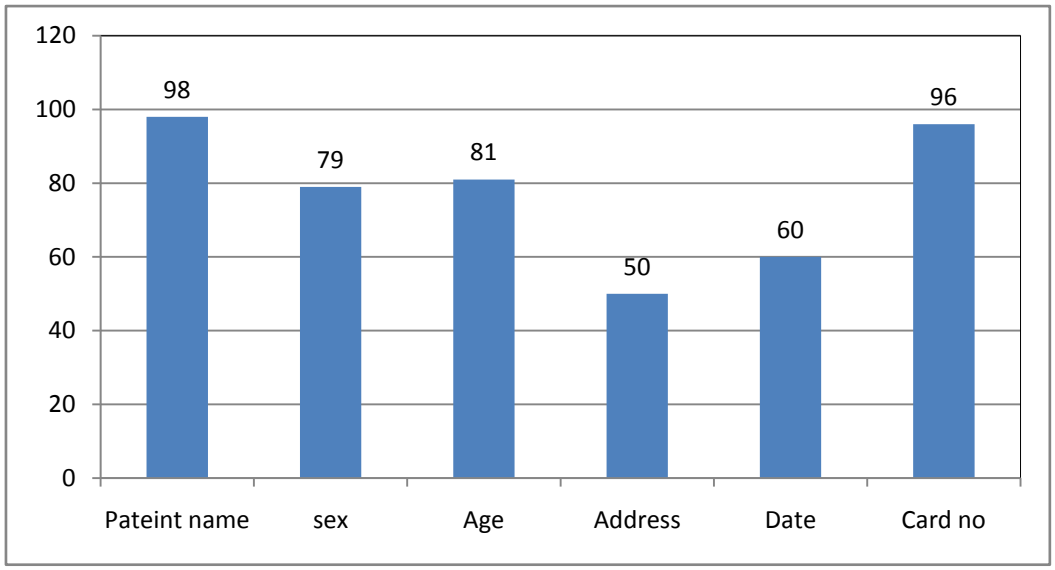

Figure 1: Patient related information on the prescription in AHMC from March 20 - May 20, 2015

b) Prescriber related information

Only on 190 (38%), 65 (13%) and 480 (96%) of prescription papers were names, qualification and signature of the prescribers specified respectively (Table 1).

Table 1: Prescriber related information on the prescription in AHMC from March 20 to May 20, 2015

Prescriber related information	Frequency	Percentage (%)
Name of the prescriber	190	38 %
Qualification	65	13 %
Signature	480	96 %

c) Drug related information

Six hundred (600) injectable drugs were prescribed during the study period and the most commonly prescribed therapeutic class was injectable antibiotics 154 (25%), anti pains 120 (20%) and diuretics 66 (11%) respectively (Table 2)

Table 2 : Drug related information on the prescription in AHMC from March 20- May20, 2015.

S.NO	Class of injectable drugs	Frequency	Percentage (%)
1	Anti biotic	154	25 %
2	Anti pain	120	20 %
3	Diuretics	66	11 %
4	Corticosteroid	54	9 %
5	Respiratory drugs	54	9 %
6	Vitamins	42	7 %
7	GIT	36	96%
8	Cardiovascular	36	6 %
9	CNS	24	4 %
10	Others	14	2.3 %
Total		600	100 %

Among the individual prescribed injections ceftriaxone (10.4%) and diclofenac (8.8%) were highly prescribed (Table 3).

Table 3 : The top ten prescribed injections at the outpatient pharmacy of AHMC from March 20- May20, 2007.

Prescribed injection	Frequency	Percentage (%)
Cefriaxone	52	10.4 %
Diclofenac	44	8.8 %
Insulin	40	8 %
Metronidazole	41	8.2 %
Gentamicin	38	7.6 %
Ampicilin	34	6.8 %
Cloxacilin	28	5.6 %
Furosemide	26	5.2 %
Penicillin G Benzanthin	20	4 %
Vitamin B complex	18	3.6 %
Total	341	68.2 %

Regarding the number of drugs per encounter 25%, 50%, 15% and 10% of the prescription were prescribed with one, two, three and four drugs respectively (Fig.2).

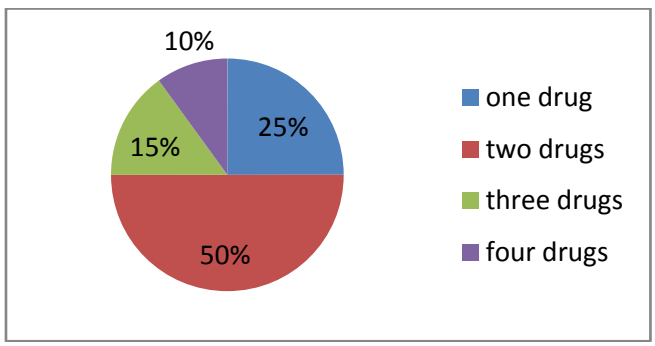

Figure 2 : The number of drugs prescribed per encounter.

Table 4 : Class of inject able drugs prescribed in AHMC from March 20 to My 20, 2015

Class of drug	Dose			Strength	Frequency		Duration of treatment		
	Over	Under	Optimum	Correct	Yes	No	Long	Short	Optimum
Anti pain	-	-	120	120	118	2	-	-	120
Corticosteroid	1	3	50	54	54	-	-	1	53
Vitamins	-	-	42	42	40	2	-	3	39
GIT	-	-	36	36	36	-	-	-	36
Antibiotics	10	4	14o	154	144	10	2	2	150
Diuretics	-	-	66	66	66	-	-	-	66
Respir. Drugs	3	1	50	54	54	-	-	-	54
CVS	-	1	35	36	36	-	-	-	36
CNS	-	1	23	24	22	2	-	-	24
Others	-	-	14	14	12	2	-	-	14
Total	15(2.5)	9(1.5)	576(96)	600(100)	582(97)	18(3)	2(0.3)	6(1)	592(98.7)

Class of drugs	Prescribed by generic name	Written in short (abbreviation)	Written for proper diagnosis
Anti pain	120	-	-
Corticosteroids	54	-	-
Vitamins	42	-	-
GIT	36	-	-
Antibiotics	134	20	-
Diuretics	62	-	-
Respiratory drugs	54	-	-
CVS	36	-	-
CNS	24	-	-
Others	10	4	-
Total	572(96)	24(4)	-

V. Discussions

In appropriate prescription of injectable drugs might reduce the quality of medical care, patient safety, and leads to wastage of resources. An encounter provides an insight into a prescriber's attitude to the diseases being treated and the nature of health care delivery system in the community.

According to this study, 490 (98%) prescription papers contain name of patients. This was comparable when compared with a study conducted in Nigeria for which 99.86% of the prescriptions contained patients name (9). Even if the figure is low 10 (2%), it might have created problem during dispensing of the right drug to the right patient, and wrong drug might have been given to wrong patient.

In this study, about 105 (21%), 95 (19%), 250 (50%), 200 (40%) and 20 (4%) prescriptions did not contain patients sex, age, address, date and card number respectively. When compared with study done in Health facilities in North Ethiopia, prescriptions which did not contain any information on patient address (6.02%), age (2%), and sex (4.03%) were higher in this study. But figures for sex, age and address were lower in this study when compared with another study in hospital pharmacy in Saudi Arabia and France which showed prescriptions that did not contained age, and sex were 22.7 and 49.7%, and no prescription contained patient address (4 ,9).

Regarding to prescriber related information, only 38%, 13% and 96% of the prescription papers were names, qualification and signature of the prescribers specified respectively.

About 310 (62%) prescriptions did not contain name and 435 (87%) did not specify the qualification of prescribers, but all most all prescriptions (96%) were signed. This was different from a study done in hospital pharmacy in Saudi Arabia where 83.3%, 9.6% and 81.9% of the prescriptions contained name, qualification and signature for the prescribers, respectively and in France where full name and signature was written only for 7.8% of prescriptions (4, 9).

Of a total of 600 prescribed drug products, the most commonly prescribed drugs were antibiotics (25.7%), ant pains (20%) and diuretics (11%) (Table2).

The percentage of drugs prescribed by generic names at AHMC was 96% which approaches the Standard value set by WHO (100%) and higher than the national value reported by Federal Democratic Republic of Ethiopia Ministry of Health (FDREMOH) in 2003(87%). However, lesser value was reported in India (48.5%) [10].This might be because of prescribers well trained, experienced, and qualified.

In this study, from a total of 600 injectable drugs prescribed, the average number of drugs per encounter was 1.2; this is lower when compared with the standard (1.6-1.8). The value from this study is also much lower

as compared with the study conducted in Hawassa University Hospital, which was 1.9 [1].This might be so due to prescribers qualification and experience. Essential drugs offer a cost-effective solution to many health problems in developing countries. The national EDL were selected regarding to disease frequency, affordability, with assured quality and availability in appropriate dosage forms. Regarding the percentage of drugs prescribed in AHMC from the essential drug list was 94.7%, which is less than the ideal value of 100% set by WHO, and other studies results reported by Desalegn in 2013 from Hawassa university hospital (96.6%) [1] and Federal Democratic Republic of Ethiopia Ministry of Health (FMOH) national report in 2003 (99%). This may be due to lack of awareness of Essential Drug List and deficiency of availability of Essential Drug List.

In this study about 582(97%) of drugs were prescribed with its frequency and about 18(3%) were not prescribed with its frequency. This is comparable with study conducted in Iran for which 96.5% and 17.3% of the drugs were prescribed with correct and incorrect frequency, respectively. The present study raveled that analgesics were the second most commonly prescribed drugs group in this health facility. This may be so due to patients demand and the primary instinct of pain alleviation by prescribers. However, higher values of 64.3 and 41 % have been reported from other studies in Nigeria [11,12]. Vitamins were prescribed in 7 % of encounters in this study. This figures is much lower than those found in the India study where 62.9 % of prescriptions had vitamins prescribed [11]. This may be so due to patients' low demand of vitamins.

In this study all drugs (100%) were prescribed in correct strength. This was different from the study conducted in Nigeria where 84% of drugs were prescribed by correct strength. This difference is might be due to prescribers experience toward writing the correct strength of drugs [12].

From a total of prescribed drugs about 15(2.5%) and 9(1.5%) were prescribed as over and under dose. This is was different from study done Iran hospital for which over and under dose was 5.01% and 8.5%, respectively. This may be because of variation in prescribers' knowledge and experience on drug dose [13].

VI. Conclusion

Most of the injectable drugs were prescribed in their generic name even if a few of them were prescribed in brand form. The percentage of injectable antibiotics prescribed was high which could contribute for drug resistance and all of the prescriptions found with no diagnosis. Some prescriptions missed relevant information especially with regard to patient and prescriber related information. Based on the findings of this study, the prescribing practice for injection exhibited deviation from the standard recommended by WHO and prescribing in generic name were found to be a problem in this study.

VII. Recommendation

Based on the result the following recommendations were forwarded.

- *Prescribers:* All of the drugs should be prescribed in their generic name and it is better if the diagnosis is written on the prescription because it helps for the pharmacists to ensure that the drugs prescribed are appropriate for the patient condition.
- *Ministry of Health:* There is a clear need for medical education programs which could rationalize the prescribing of injection and the prescribers should clearly complete information on the prescriptions.
- *Pharmacy staff:* The pharmacy staff should provide the relevant information to the prescribers about effective utilization of drugs by establishing Drug Information Center (DIC). Identifying and correcting health care is the common duty of all health professionals and inter disciplinary communication should be improved among them.
- *To concerned body:* Further research could be conducted on the topic with wide sample size and analytical statistics.

Acronyms

AHMC: Adama Hospital Medical College
ARVT: Anti Retro viral Therapy Pharmacy
EDL: Essential Drug List
EP: Emergency Pharmacy
ID: Inject able Drugs
IP: Inpatient Pharmacy
OP: Outpatient Pharmacy
OPD: Out Patient Department
WHO: World Health Organization

Authors' contribution

BKG; carried out the research drafting, design, statistical analysis and interpretation as well as coordinating all activities in the research, AF; participate in the sequence alignment and drafted a manuscript, GTT; participates in the design of the study and performs statistical analysis, ADD; participate in the design, analysis and interpretation of the research, JLL; participated in literature review, identified the research design issues, participated in coordination, and reviewed the manuscript.

Competing interest

None declared

VIII. Acknowledgement

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References Références Referencias

1. Desalegn A (2013). Assessment of drug use pattern using WHO prescribing indicators at Hawassa University teaching and referral hospital. *East Med. Health. Vol*. 13:170-85.
2. http/www.wise geek.com what are injection drugs.htm. Accessed date July13-201
3. Pattern of drug prescription Dubai hospital, United Arab Emirates {htt;/www.ncbi.nlm.nih.gov/pmc268 7907/{3} accessed date June12, 2011
4. Francois P, Chirpaz E, Bontemps LJ, Bassonsicalop J (1997). Evaluation of prescription writing quality in France University Hospital quality health care. *Clin. Perform. Qual. Health*. Vol.5 (3):111-115.
5. Guide lines for implementing drug utilization review programs in hospitals. Accessed date July7, 2011.
6. Hakim & Nikzad, A (2004). Status of prescription and drug usage in Tehran. *J prev med public health.* Vol.45; 1-8
7. Mosleh, A., Darbooy, S., Khoshnevis Ansari, S., & Mohammadi, M. (2008). Drug prescription based on WHO indicators: Tehran University of medical sciences facilities with pharmacy. *Tehran University Medical Journal,* Vol. 65(14), 12-15.
8. Binu M., Sabbu R., Surendra K., Hire math D. (2013). A Retrospective Analysis of Prescribing Practice Based on WHO Prescribing Indicators at Four Selected Hospitals of West Ethiopia. *East and Central African Journal of Pharmaceutical Sciences.* Vol. 16, 69-74
9. Physicians medication prescribing in primary care in Riyadh City, Saud Arabia (2004). Literature review: variation in drug prescribing.vol.112:65-72.
10. Kermode M, Muani V. (2003). Injection prescribing pattern in India. *Indian J Med Res.* Vol.134:423-31.
11. Kermode M, Muani V. (2006). Injection practices in the formal & informal healthcare sectors in rural north India. *Indian J Med Res*.Vol.124:513-20.
12. Igbiks Tamunoand Joseph O Fadare (2012). Drug Prescription Pattern in a Nigerian Tertiary Hospital. *Tropical Journal of Pharmaceutical Research*.Vol.11 (1): 146-152
13. Mohammad Meskarpour-Amiri, Nooredin Dopeykar, Parisa Mehdizadeh Ali Ayoubian & Zahra Motaghed (2015). A Study on the Factors Affecting the Prescription of Injection Medicines in Iran: A Policy Making Approach. *Global Journal of Health Science*; Vol. 7, No. 3

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Assay for Quantitative Analysis of Losartan Potassium by using UV Spectroscopy

By Zehra Ashraf, Nimra Waheed, Erum Naz, Fatima Ahmed, Taiba Asim, Fatima Muzammil, Syeda Saghira & Maria Ayub

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Abstract- Drug is a substance that brings about a change in the biological functions through its chemical actions. Drug losartan are the first marketed beta blockers of the angiotensin II-type (AT1) receptor. It is the prototypic ARB. Their pharmacologic effect are very similar to the ACE inhibitors, because they also produce the arteriolar and venous dilation and block aldosteron secretion, thus lowers the blood pressure, decreases the salt and water retention. Its chemical name is losartan potassium. It is indicated in mild to severe hypertension and contraindicated in pregnancy because it increases teratogenic risk and may leads to mal formation or death of fetus. It is light yellow solid and stable under recommended storage conditions, freely soluble in water and soluble in alcohol. Losartan inhibit the binding of angiotensin II to type 1 in tissue (kidney and adrenal gland) losartan and its active metabolite is more potent then losartan inhabitation causes vasodilation and decreases sodium and water retention. The aim of study is to determine the %age assay of losartan potassium of different brands.

Keywords: losartan potassium, anti-hypertensive, beta blockers.

GJMR-B Classification : NLMC Code: QV 704

Strictly as per the compliance and regulations of:

Assay for Quantitative Analysis of Losartan Potassium by using UV Spectroscopy

Zehra Ashraf [α], Nimra Waheed [σ], Erum Naz [ρ], Fatima Ahmed [ω], Taiba Asim [¥], Fatima Muzammil [§], Syeda Saghira [χ] & Maria Ayub [ν]

Abstract- Drug is a substance that brings about a change in the biological functions through its chemical actions. Drug losartan are the first marketed beta blockers of the angiotensin II-type (AT1) receptor. It is the prototypic ARB. Their pharmacologic effect are very similar to the ACE inhibitors, because they also produce the arteriolar and venous dilation and block aldosteron secretion, thus lowers the blood pressure, decreases the salt and water retention. Its chemical name is losartan potassium. It is indicated in mild to severe hypertension and contraindicated in pregnancy because it increases teratogenic risk and may leads to mal formation or death of fetus. It is light yellow solid and stable under recommended storage conditions, freely soluble in water and soluble in alcohol. Losartan inhibit the binding of angiotensin II to type 1 in tissue (kidney and adrenal gland) losartan and its active metabolite is more potent then losartan inhabitation causes vasodilation and decreases sodium and water retention. The aim of study is to determine the %age assay of losartan potassium of different brands.

Keywords: losartan potassium, anti-hypertensive, beta blockers.

I. Introduction

Drug is a substance that brings about a change in the biological functions through its chemical actions. Losartan are the first marketed blockers of the angiotensin II-type receptor (non peptide, orally active, and competitive antagonist of AT1 receptor) [1]. Its wavelength is 234nm which lies in the UV range i.e. 200-380nm. It is the prototypic ARB. Their pharmacologic effects are very similar to the ACE inhibitors, because they also produce the arteriolar and venous dilation and block aldosteron secretion, thus lower the blood pressure, decreases the salt and water retention. They have no effect on bradykinin levels and metabolism [2]. They decrease the nephrotoxicity of diabetes and making attractive therapy in hypertensive diabetics. They also provide benefit in patient with heart failure and chronic kidney disease. The adverse effects are also similar to ACE's inhibitors, but the risk of cough and angioedema is decreased because it has no effect on bradykinin levels ARB's are fetotoxic and should not be used by women who are pregnant, it is contraindicated during pregnancy [3].

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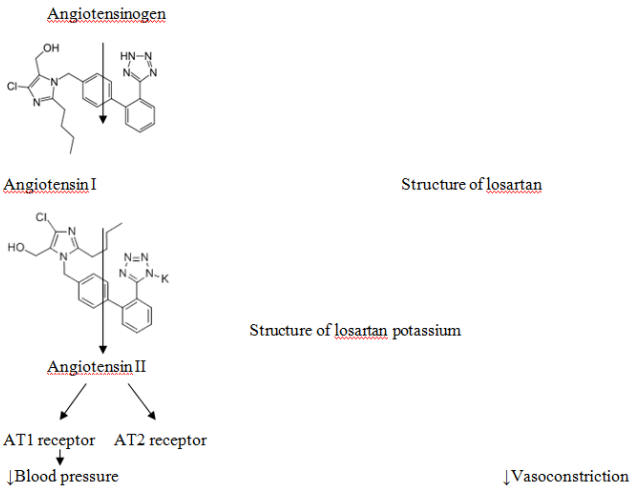
Losartan belong to antihypertensive therapeutic class. It blocks the receptor also called angiotensin II receptor blocker (ARBs). Losartan is specific or selective type I angiotensin II receptor (AT1) antagonist. They block receptor as a result decrease in blood pressure (rennin-angiotensin-aldosteron system) RAAS [4].

Losartan inhibit the binding of angiotensin II to type I in tissue (kidney and adrenal glands). Losartan and its active metabolitesE-3174 is more potent then losartan inhibition (angiotensin II to type I) cause vasodilation (normally AT1→vasoconstriction + aldosteron) decrease sodium and water retention and increases excretion [5].



The formula of losartan is $C_{22}H_{23}ClKN_{6O}$.Losartan is given orally and it is well absorbed but undergo first pass metabolism. Systemic bioavailability is 33 after metabolism it is highly protein bound and while taking the food with medicine decreases its absorption. In healthy individual it distributes about 34l and its metabolite about 12l. It is metabolized in liver by an enzyme CYP450, 2C9 and 3A4 and converts into an active metabolite 5 carboxylic acid derivatives (E-3174). It is administered orally so 35% excreted in urine and about 60% excretion in feces. When administer by IV route then 45% of drug is excreted in urine and 50% drug in feces [6]. Protein binding of losartan is 99.7% (primarily albumin) and bioavailability is 25-35%. [7].

The appearance of losartan potassium is white to off white crystalline powder its melting point is

between 263-265C and it is freely soluble in water. Molecular mass of losartan potassium is 462.01 [8].

Its indications are: mild to severe hypertension, diabeticnephropathy reducing risk of stroke in people with heart disease [9]. Its adverse effect include: losartan worsens the condition the patients who had a history of PD, in the form of several falls and episodes of freezing and severe bradykinesia. So, its combination with levodopa or carbidopa should be avoided [10]. Hypergranulosis and hyperkeratosis be developed during its treatment with losartan for arterial hypertension. Long term of losartan potassium develops angioedema. It triggers psoriasis and generalized bullous lesions and patients can develop Steven-Johnson syndrome and renal impairment during the treatment of hypertension with losartan [11].

Losartan potassium is contraindicated in pregnancy because it is fetotoxic and cancause mal formation of the fetus and even leads to death and it is also contraindicated for renal impaired function and bilateral renal artery stenosis[12].

Drug-Drug interactions of losartan potassium with fluconazol rises the plasma level of losartan, indomethacin blunt its antihypertensive effect, concomitant use of potassium supplement may lead to increase in serum potassium, rifamycin may reduce the antihypertensive effect, and increase in lithium may increase its adverse effects [13]. Drug food interactions of losartan potassium with grapefruit which decreases its active metabolites so reducing the efficacy, drinking alcohol can further lower B.P and may increase certain side effects [14]

II. Methodology

a) Material

Distilled water, losartan potassium tablets standard and sample, glass rod, mortar and pestle, measuring cylinder, tissue paper, weigh balance and UV visible spectrophotometer.

b) Method

- Wash the apparatus (beakers, glass rod, conical flask, mortar and pestle, measuring cylinder) and rinsed with freshly prepared distilled water.Dry all the apparatus.Now weight the tablets accurately.Crush the tablets in mortar and pestle.Transfer the 0.2mg of calculated amount of drug into 100ml of beaker andmake up the volume with freshly prepare distilled water.Note down the absorbance of standard solution and sample solution separately at 234nm wavelength by using UV visible spectrophotometer.
- Calculate the % assay with the help of formula [15].

III. Observations and Calculations

Standard

Weight of tablet 1=0.158gm
Weight of tablet 2=0.156gm

Average: 0.158+0.156/2=0.157
Each tablet of 100mg or 0.1gm

0.1gm ---------- 0.175gm
0.2gm ---------- 0157×0.1/2=0.314gm

Sample

Weight of tablet 1=0.248gm
Weight of tablet 2=0.247gm

Average: 0.248+0.247/2=0.2475gm
Each tablet of 100mg or 0.1gm

0.1gm ---------- 0.2475gm
0.2gm ---------- 0.2475×0.2/0.1=0.495gm

Losartan Potassium

Absorbance of Standard	Absorbance of Sample
2.864	2.796

% ASSAY:

% assay = absorbance of sample/absorbance of standard×100
% assay = 2.796/2.864×100

% assay = 97.62 or 98%

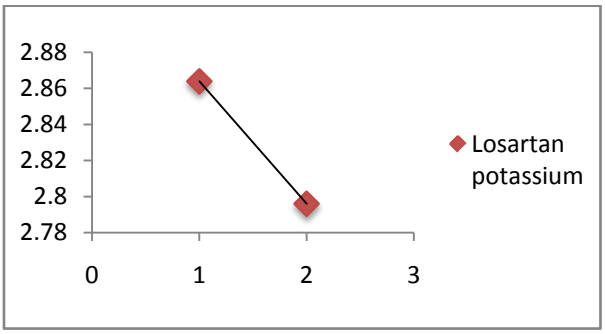


Figure 1: Linearity of Losartan potassium

IV. Result

We have performed the assay of losartan potassium by using UVvisible spectrophotometer, and the calculated % assay of losartan potassium is 98% [16].

V. Discussion

The aim of the study was to carry out the pharmaceutical assay on different brands of losartan potassium by using spectrophotometer. This results shows that absorbance is directly proportionto concentration so, it is obeys to Beers lambert law and assay of all brands are within range of USP and British pharmacopeia linearity given in figure1.We have done these types ofassay for different brand which helpful for selecting drugs[17].

References Références Referencias

1. Clark M.A., Finkel R., Rey J.A., Whalen k., 2012, "antihypertensive", Lippincott's illustrated reviews pharmacology, published by Lippincott Williams and Wilkins, wolters kluwer business. Edition (5th): 227, 228, 235, 236.
2. Katzung B.G., Masters S.B., Trevor A.J, 2012, "antihypertensive agent". Basic and clinical pharmacology, Lange medical publications, e (12th): 3, 185.
3. Boersma C, Atthobari.J, Gansevoort R, de. Jongvan den Berg L, de Jong P, de Zeevw D etal. 2006, "pharmacoeconomics of angiotensin II antagonist in type 2 diabetic patients with nephropathy": implications for decision making. "Pharmacoeconomics" 24(6): 35-523.
4. Julienne K. Kirk, Pharm-d, wake forest university school of medicine, Winston-Salem North Carolina. Amfam physician; 59 (II): 3140-3148, June 1999
5. Rafael Hernández-Hernández , Angiotensin II receptor antagonists role in arterial hypertension, Apr 27, 2014
6. Nafisur Rahman, Masoom Raza Siddiqui and Syed Najmul Hejaz Azmi, Development and Validation of Kinetic Spectrophotometric Method for the Determination of Losartan Potassium in Pure and Commercial Tablets, Journal of the Chinese Chemical Society, Volume, pages 735–743, June 2006.
7. Karen L. Goa, Antona J. Wagstaff. A Review of its Pharmacology, Clinical Efficacy and Tolerability in the Management of Hypertension,Drugs, Volume 51, Issue 5, pp 820-845, May 1996
8. S. Shanmugam, Ramya Chakrahari*, K. Sundaramoorthy, T. Ayyappan, T. Vetrichelvan. Formulation and Evaluation of Sustained Release Matrix Tablets of Losartan potassium. International Journal of PharmTech Research. Vol.3, No.1, pp 526-234, Mar 2011.
9. Barry M. Brenner, M.D., Mark E. Cooper, M.D., Ph.D., Dick de Zeeuw, M.D., Ph.D., William F. Keane, M.D, Effects of Losartan on Renal and Cardiovascular Outcomes in Patients with Type 2 Diabetes and Nephropathy, The New England Journal of Medicine; 345:861-869,Sep 2001
10. Karen L. Goa, Antona J. Wagstaff, A Review of its Pharmacology, Clinical Efficacy and Tolerability in the Management of Hypertension. Drugs. Volume 51, Issue 5, pp 820-845, May 1996
11. George B Pylypchuk, ACE Inhibitor—Versus Angiotensin II Blocker–Induced Cough and Angioedema, Annal of Pharmacotherpy. vol. 32 no. 10 1060-1066, October 1998
12. S. Alwan*, J.E. Polifka and J. M. Friedman, Angiotensin II receptor antagonist treatment during pregnancy, Clinical and Molecular Teratology, Volume 73, Issue 2, pages 123–130, February 2005
13. Yoshinaga K, Drug-interactions and adverse effects of losartan potassium, an angiotensin II receptor antagonist, Japanese Journal of Clinical Medicine, 57(5):1194-1197,1999.
14. Domenic A. Sica, Clinical Pharmacokinetics of Losartan,Clinical Pharmacokinetics, , Volume 44, Issue 8, pp 797-814,August 2005.
15. Safila naveed, Zehra ashraf and Tasleem mukhtar, assay of different brands of cefadroxil by using spectrophotometric method, Mintage journal of Pharmaceutical & Medical Sciences | 12-14, 2015
16. Safila Naveed, Zehra Ashraf and Tasleem Mukhtar, Assay of Pioglitazone HCL by Using UV Visible Spectrophotometer, British Journal of Research, 024-029, 2015.
17. Safila naveed, Zehra ashraf and Muhammad tanweer alam, using UV spectrophotometric method to determine the linearity of vildagliptin brands, The American Journal of Innovative Research and Applied Sciences, 2015.

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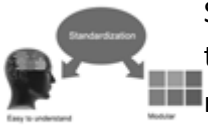

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Before start writing a good quality Computer Science Research Paper, let us first understand what is Computer Science Research Paper? So, Computer Science Research Paper is the paper which is written by professionals or scientists who are associated to Computer Science and Information Technology, or doing research study in these areas. If you are novel to this field then you can consult about this field from your supervisor or guide.

TECHNIQUES FOR WRITING A GOOD QUALITY RESEARCH PAPER:

1. Choosing the topic: In most cases, the topic is searched by the interest of author but it can be also suggested by the guides. You can have several topics and then you can judge that in which topic or subject you are finding yourself most comfortable. This can be done by asking several questions to yourself, like Will I be able to carry our search in this area? Will I find all necessary recourses to accomplish the search? Will I be able to find all information in this field area? If the answer of these types of questions will be "Yes" then you can choose that topic. In most of the cases, you may have to conduct the surveys and have to visit several places because this field is related to Computer Science and Information Technology. Also, you may have to do a lot of work to find all rise and falls regarding the various data of that subject. Sometimes, detailed information plays a vital role, instead of short information.

2. Evaluators are human: First thing to remember that evaluators are also human being. They are not only meant for rejecting a paper. They are here to evaluate your paper. So, present your Best.

3. Think Like Evaluators: If you are in a confusion or getting demotivated that your paper will be accepted by evaluators or not, then think and try to evaluate your paper like an Evaluator. Try to understand that what an evaluator wants in your research paper and automatically you will have your answer.

4. 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.

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

6. Use of computer is recommended: As you are doing research in the field of Computer Science, then this point is quite obvious.

7. Use right software: Always use good quality software packages. If you are not capable to judge good software then you can lose quality of your paper unknowingly. There are various software programs available to help you, which you can get through Internet.

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9. Use and get big pictures: Always use encyclopedias, Wikipedia to get pictures so that you can go into the depth.

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

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

12. Make all efforts: Make all efforts to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in introduction, that what is the need of a particular research paper. Polish your work by good skill of writing and always give an evaluator, what he wants.

13. Have backups: When you are going to do any important thing like making research paper, you should always have backup copies of it either in your computer or in paper. This will help you to not to lose any of your important.

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15. Use of direct quotes: When you do research relevant to literature, history or current affairs then use of quotes become essential but if study is relevant to science then use of quotes is not preferable.

16. Use proper verb tense: Use proper verb tenses in your paper. Use past tense, to present those events that happened. Use present tense to indicate events that are going on. Use future tense to indicate future happening events. Use of improper and wrong tenses will confuse the evaluator. Avoid the sentences that are incomplete.

17. Never use online paper: If you are getting any paper on Internet, then never use it as your research paper because it might be possible that evaluator has already seen it or maybe it is outdated version.

18. Pick a good study spot: To do your research studies always try to pick a spot, which is quiet. Every spot is not for studies. Spot that suits you choose it and proceed further.

19. Know what you know: Always try to know, what you know by making objectives. Else, you will be confused and cannot achieve your target.

20. Use good quality grammar: Always use a good quality grammar and use words that will throw positive impact on evaluator. Use of good quality grammar does not mean to use tough words, that for each word the evaluator has to go through dictionary. Do not start sentence with a conjunction. Do not fragment sentences. Eliminate one-word sentences. Ignore passive voice. Do not ever use a big word when a diminutive one would suffice. Verbs have to be in agreement with their subjects. Prepositions are not expressions to finish sentences with. It is incorrect to ever divide an infinitive. Avoid clichés like the disease. Also, always shun irritating alliteration. Use language that is simple and straight forward. put together a neat summary.

21. 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 to your topic. You may also maintain your arguments with records.

22. Never start in last minute: Always start at right time and give enough time to research work. Leaving everything to the last minute will degrade your paper and spoil your work.

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

24. Never copy others' work: Never copy others' work and give it your name because if evaluator has seen it anywhere you will be in trouble.

25. Take proper rest and food: No matter how many hours you spend for your research activity, if you are not taking care of your health then all your efforts will be in vain. For a quality research, study is must, and this can be done by taking proper rest and food.

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

27. Refresh your mind after intervals: Try to give rest to your mind by listening to soft music or by sleeping in intervals. This will also improve your memory.

28. Make colleagues: Always try to make colleagues. No matter how sharper or intelligent you are, if you make colleagues you can have several ideas, which will be helpful for your research.

29. Think technically: Always think technically. If anything happens, then search its reasons, its benefits, and demerits.

30. Think and then print: When you will go to print your paper, notice that tables are not be split, headings are not detached from their descriptions, and page sequence is maintained.

31. Adding unnecessary information: Do not add unnecessary information, like, I have used MS Excel to draw graph. Do not add irrelevant and inappropriate material. These all will create superfluous. Foreign terminology and phrases are not apropos. One should NEVER take a broad view. Analogy in script is like feathers on a snake. Not at all use a large word when a very small one would be sufficient. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Amplification is a billion times of inferior quality than sarcasm.

32. Never oversimplify everything: To add material in your research paper, never go for oversimplification. This will definitely irritate the evaluator. Be more or less specific. Also too, by no means, ever use rhythmic redundancies. Contractions aren't essential and shouldn't be there used. Comparisons are as terrible as clichés. Give up ampersands and abbreviations, and so on. Remove commas, that are, not necessary. Parenthetical words however should be together with this in commas. Understatement is all the time the complete best way to put onward earth-shaking thoughts. Give a detailed literary review.

33. Report concluded results: Use concluded results. From raw data, filter the results and then conclude your studies based on measurements and observations taken. Significant figures and appropriate number of decimal places should be used. Parenthetical remarks are prohibitive. Proofread carefully at final stage. In the end give outline to your arguments. Spot out perspectives of further study of this subject. Justify your conclusion by at the bottom of them with sufficient justifications and examples.

34. After 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 to 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 in 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 criterion for grading the final paper by peer-reviewers.

Final Points:

A purpose of organizing a research paper is to let people to interpret your effort selectively. The journal requires the following sections, submitted in the order listed, each section to start on a new page.

The introduction will be compiled from reference matter and will reflect the design processes or outline of basis that direct you to make study. As you will carry out the process of study, the method and process section will be constructed as like that. The result segment will show related statistics in nearly sequential order and will direct the reviewers next to the similar intellectual paths throughout the data that you took to carry out your study. The discussion section will provide understanding of the data and projections as to the implication of the results. The use of good quality references all through the paper will give the effort trustworthiness by representing an alertness of 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 the 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 evade

- Insertion a title at the foot of a page with the subsequent text on the next page
- Separating a table/chart or figure - impound each figure/table to a single page
- Submitting a manuscript with pages out of sequence

In every sections of your document

· Use standard writing style including articles ("a", "the," etc.)

· Keep on paying attention on the research topic of the paper

· Use paragraphs to split each significant point (excluding for the abstract)

· Align the primary line of each section

· Present your points in sound order

· Use present tense to report well accepted

· Use past tense to describe specific results

· Shun familiar wording, don't address the reviewer directly, and don't use slang, slang language, or superlatives

· Shun use of extra pictures - include only those figures essential to presenting results

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

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The summary should be two hundred words or less. It should briefly and clearly explain the key findings reported in the manuscript--must have precise statistics. It should not have abnormal acronyms or abbreviations. It should be logical in itself. Shun citing 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 approach 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. Yet, use comprehensive sentences and do not let go readability for briefness. You can maintain it succinct by phrasing sentences so that they provide more than 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 maintain the initial two items to no more than one ruling each.

- Reason of the study - 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 quantitative data; results of any numerical analysis should be reported
- Significant conclusions or questions that track from the research(es)

Approach:

- Single section, and succinct
- As a outline of job done, it is always written in past tense
- A conceptual should situate on its own, and not submit to any other part of the paper such as a form or table
- Center on shortening results - bound background information to a verdict or two, if completely necessary
- What you account in an conceptual must be regular with what you reported in the manuscript
- Exact spelling, clearness 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 to comprehend and calculate the purpose of your study without having to submit to other works. The basis for the study should be offered. Give most important references but shun difficult to make a comprehensive appraisal of the topic. In the introduction, describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will have no attention in your result. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here. Following approach can create a valuable beginning:

- Explain the value (significance) of the study
- Shield the model - why did you employ this particular system or method? What is its compensation? You strength remark on its appropriateness from a abstract point of vision as well as point out sensible reasons for using it.
- Present a justification. Status your particular theory (es) or aim(s), and describe the logic that led you to choose them.
- Very for a short time explain the tentative propose and how it skilled the declared objectives.

Approach:

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- Sort out your thoughts; manufacture one key point with every section. If you make the four points listed above, you will need a least of four paragraphs.

- Present surroundings information only as desirable in order hold up a situation. The reviewer does not desire to read the whole thing you know about a topic.
- Shape the theory/purpose specifically - do not take a broad view.
- As always, give awareness to spelling, simplicity and correctness of sentences and phrases.

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This part is supposed to be the easiest to carve if you have good skills. A sound written Procedures segment allows a capable scientist to replacement 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 for the least amount of information that would permit another capable scientist to spare 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 object, mention the specific item describing a way but draw the basic principle while stating the situation. The purpose is to text 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:

- Explain materials individually only if the study is so complex that it saves liberty this way.
- Embrace particular materials, and any tools or provisions that are not frequently found in laboratories.
- Do not take in frequently found.
- If use of a definite type of tools.
- Materials may be reported in a part section or else they may be recognized along with your measures.

Methods:

- Report the method (not 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 - details how procedures were completed not how they were exclusively performed on a particular day.
- If well known procedures were used, account the procedure by name, possibly with reference, and that's all.

Approach:

- It is embarrassed or not possible to use vigorous voice when documenting methods with no using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result when script up the methods most authors use third person passive voice.
- Use standard style in this and in 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 a 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. Carry on to be to the point, by means of statistics and tables, if suitable, to present consequences most efficiently.You must obviously differentiate material that would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matter should not be submitted at all except requested by the instructor.

Content

- Sum up your conclusion in text and demonstrate them, if suitable, with figures and tables.
- In manuscript, explain each of your consequences, point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation an exacting study.
- Explain results of control experiments and comprise 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 in manuscript form.

What to stay away from

- Do not discuss or infer your outcome, report surroundings information, or try to explain anything.
- Not at all, take in raw data or intermediate calculations in a research manuscript.
- Do not present the similar data more than once.
- Manuscript should complement any figures or tables, not duplicate the identical information.
- Never confuse figures with tables - there is a difference.

Approach

- As forever, use past tense when you submit to 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 part.

Figures and tables

- If you put figures and tables at the end of the details, make certain that they are visibly distinguished from any attach appendix materials, such as raw facts
- Despite of position, each figure must be numbered one after the other and complete with subtitle
- In spite of position, each table must be titled, numbered one after the other and complete with heading
- All figure and table must be adequately complete that it could situate on its own, divide from text

Discussion:

The Discussion is expected the trickiest segment to write and describe. A lot of papers submitted for journal are discarded based on problems with the Discussion. There is no head of state for how long a 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 implication of the study. The purpose here is to offer an understanding of your results and hold up for all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of result should be visibly 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 with prospect, and let it drop at that.

- Make a decision if each premise is supported, discarded, or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."
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- You may propose future guidelines, such as how the experiment might be personalized to accomplish a new idea.
- Give details all of your remarks as much as possible, focus on mechanisms.
- Make a decision if the tentative design sufficiently addressed the theory, and whether or not it was correctly restricted.
- Try to present substitute explanations if sensible alternatives be present.
- One 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 available information
- Submit to work done by specific persons (including you) in past tense.
- Submit to generally acknowledged facts and main beliefs in present tense.

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- To guard yourself and others from possible illegal use please do not permit anyone right to use to your paper and files.

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Topics	Grades		
	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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