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A Case Report on Coarctation of the Aorta

Akhila saila sree T^{*1}, Samyuktha K², Nandini Pandey², Bhargav reddy C²

¹Santhiram College of Pharmacy, Nandyal, Kurnool Dist, Andhra Pradesh, India

²Santhiram Medical College and General Hospital, Nandyal, Kurnool Dist, Andhra Pradesh, India



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ABSTRACT

Coarctation of the aorta is described as an innate cardiac anomaly comprising the narrow aortic section consisting medial stiffen with a bit in folding of the media and fortuitous neo tissue layer membrane (intimal). Coarctation of the aorta is the 6th most familiar lesion in hereditary/innate heart disease. Here, the localized constriction forms shelf like formation with an aberrant aperture or membranous curtain like formation with a central or aberrant aperture, though in spite of consolation of the anatomical restraint, the succeeding risk of premature morbidity and death keep on. The present study figures the ideal guidance of a disease from neonatal to adult life. It also includes the treatment of coarctation of the aorta by the evolution of transcatheter treatment for either the native and peculiarly repetitive coarctation of the aorta. Late obstacles, even after the proper fortunate treatment, are not common. So, lifelong follow-up is more vital in coarctation of aorta patients.

*Corresponding Author

Name: Akhila saila sree T

Phone: 8008609502

Email: akhilasailasree@gmail.com

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INTRODUCTION

The word coarctation referred as constrict/tighten and is originated from the latin coatare, i.e., to tightening inturn the stemming from co-and arctare and to repair vigorously. From artus, close, tight-coarctation of aorta (Co A) is a relatively common innate cardiac defect. In Coarctation of the aorta, a portion of the artery constricts, usually in nearer to the ductus arteriosus or the ligamentum arteriosum following the blockage. But the narrow area of the aorta may differ in location and also in the structure, wideness and length. Its incidence ranges from 5 - 8% of all the innate cardiac defects. This state is most frequently diagnosed because of heart

sounds or HTN found on general auscultation. Aortic blockage may be restored by the surgery or by the transcatheter operating procedures, the later it mainly go through the balloon angioplasty and stent installation. In back days, surgery has been widely used, but due to the death rate and extremely obstacles correlated with surgery, catheter operating procedure are exclusively used for the therapeutic outcome [1]. Balloon angioplasty in infants and stents in teens are fetching early choice of treatment for the management of coarctation of the aorta [2]. Classification of coarctation of aorta includes the:

1. Native coarctation of the aorta
2. Recurrent coarctation of the aorta

It also includes preductus, ductus and post ductus coarctation of the aorta. Native coarctation of the aorta defines the detached tapering of the subsiding aorta that ensures from ridge-like stiffen of the media of aortic wall that projects into lumen facing the insertion of the ductus arteriosus. The beginning of the subclavian artery can be intricate with post-stenotic expansion of the aorta commonly encountered.

Recoarctation of the aorta is defined as restenosis succeeding of an inceptive triumphant surgical or

A Study on Impact of Pharmacist Interventions on Therapeutic Outcomes of Type II Diabetic Patients in a Tertiary Care Teaching Hospital

Voleti Vijaya Kumar^{1,*}, Ankala Hemanth Reddy¹, Jinkala Sudharshan¹, Gudemella Lokendranath², RE Ugandar¹, Challa Madhusudhana Chetty¹

¹Department of Pharmacy Practice, Santhiram College of Pharmacy, Nandyal, Andhra Pradesh, INDIA.

²Department of General Medicine, Santhiram Medical College & General Hospital, Nandyal, Andhra Pradesh, INDIA.

ABSTRACT

Background: The management of type II diabetes mellitus is a complex, which requires continuous medical care by the health care professionals and good self-care efforts by patients. Pharmacist interventions programs delivered by the pharmacists are known to help the patients with diabetes benefited in achieving treatment goals, improving outcomes. **Objectives:** To study the impact of pharmacist interventions on therapeutic outcomes, determined by hemoglobin A1c (HbA_{1c}) and secondarily on blood glucose levels, blood pressure, medication adherence, self-care activities and health related quality of life. **Materials and Methods:** A Prospective randomized controlled study is conducted with 150 type II diabetic patients. Of those, 75 patients were in intervention group received the pharmacist interventions over a period of 4 months and 75 patients were in control group, whereas control group do not receive interventions. The primary outcome measure was change in HbA_{1c} and secondary outcomes were changes in fasting blood glucose, blood pressure, medication adherence, self-care activities and health related quality of life. **Results:** A population of 150 patients completed the study. The intervention patients exhibited a significant reduction in HbA_{1c} values than the control group, the intervention group showed a greater reduction in the fasting blood glucose and blood pressure levels between baseline and end of the 4 months than the control group. Improvements were observed in Quality of life, self-reported medication adherence, self-care activities in the intervention group. **Conclusion:** A pharmacist interventions program resulted in better glycemic control, quality of life, medication adherence and self-care of type II diabetic patients over a 4-month period.

Key words: Type II Diabetes, Pharmacist interventions, HbA_{1c}, Quality of life, Adherence.

INTRODUCTION

Diabetes mellitus is a metabolic disease that directly affects well-being and poses a high morbidity risk. The long-term vascular complications associated with type II diabetes accounts for the majority belonging to morbidity and mortality in patients.¹ Several studies shown that lowering hemoglobin A1c is associated with reduced onset or progression of micro vascular complications.² Treatment strategies applied for type II diabetes are complex, requiring ongoing medical care, continuing patient education and support to prohibit acute complications and minimize the risk of chronic complications.³

Pharmacists can play crucial role in diabetes treatment by helping patients improve

their chances of reaching the curative and lifestyle goals. As experts in drug selection, identification of drug related problems and patient education pharmacists can be excellent additions to multidisciplinary health care team, contributing to better care for patients.⁴ They can help in patients individually or with other health professionals in designing, implementing and monitoring therapeutic plans to achieve good disease outcomes by pharmacist interventions.⁵

Pharmaceutical care programs developed and executed by pharmacists have been found effective in improving the quality of care for patients suffering with various diseases such as hypertension, asthma, dyslipidemia, heart failure and tuberculosis. Pharmacist-

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Address for correspondence:

Mr. Voleti Vijaya Kumar (M. Pharm., (Ph.D))

Associate Professor, Department of Pharmacy Practice, Santhiram College of pharmacy, Nandyal-518112, Andhra Pradesh, INDIA.

Phone no: +91 9885583630

Email Id: vijay66vkk@gmail.com



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Santhiram College of Pharmacy
NH-40, NANDYAL

A Prospective Observational Study on Prevalence and Risk Factors of Anemia in a Tertiary Care Hospital

Ch.Archana¹, D.Siva Sankar¹, D.Jyothi¹, C.Bhargava Reddy¹, G.Venugopal Gupta²

¹Department of Pharmacy Practice, Santhiram College of Pharmacy, Nandyal, Kurnool, Andhra Pradesh, India

²Department of General Medicine, Santhiram Medical College & General Hospital, Nandyal, Kurnool, Andhra Pradesh, India

Abstract:

Back ground- Anemia is a condition where hemoglobin levels in blood falls below the normal levels. RBC and their oxygen carrying capacity are insufficient to meet physiological needs. However for detecting anemia the WHO has recommended certain cutoff levels of hemoglobin for different ages below which the individual is consideration is anemic.

Objectives: To access the prevalence and risk factors of anemia in a tertiary care hospital.

Materials and methods: A Prospective observational study was conducted in Santhiram medical college and general hospital, Nandyal from July 2017 to December 2017, to study the prevalence of anemia and risk factors among population, where clinical data are collected by using case sheets to study anemic conditions were diagnosed based on complete blood picture (HB, MCV) levels, past medical history and dietary habits.

Study design: A total of 84 patients were evaluated for their anemia condition, out of which 69 patients showed positive results, to anemia. The prevalence and risk factors of anemia was summarized as count and percentage. A chi-square test was used to asses, the prevalence among different age groups-gender and risk factor identification based on diet, age group, past medical history.

Results: out of all the subjects 72.6% (n=61) are anemic, in this female subjects showed 78%,male subjects showed 28% and Risk factor assessment was done.

Discussion: In the current study we assessed the prevalence and risk factors of anemia in population residing in Santhiram general hospital, Nandyal. In our study prevalence of anemia is alarmingly high. Microcytic type is highly observed. Female subjects are more prone to anemia compared to male subjects. Anemia condition is common in the age group of 55-65 years. Chronic kidney disorder is the major risk factor for causing anemia. This was compared to World Health Organization criteria.

Conclusion: Our study proves that prevalence of anemia is more in female with age group 55-65 years in that Microcytic anemia is commonly observed. Our study advises that, age, traditional eating habits, past medical history of the subjects are main reason for arising anemia. Providing health and nutrition education will be the key involvements to prevent and control this huge health problem.

Key words: Anemia, prevalence and risk factors.

I. INTRODUCTION

Blood is made up of fluid called plasma which contains RBC, WBC, Platelets, and proteins. Red blood cells are made up in bone marrow and release into blood stream every day. Hemoglobin binds to oxygen and takes oxygen from lungs to all parts of the body. To make red blood cells and hemoglobin constantly require a healthy bone marrow and nutrients such as iron and certain vitamins that obtain from food.

Iron deficiency is thought to be the most common reason for anaemia, although other conditions, such as folate, vitamin B12 and vitamin A deficiencies, chronic inflammation, parasitic infections, and inherited disorders can all cause anaemia.

Normal Hb levels:

AGE	g/dl
6 months to 6 years	11
6 years to 12 years	12
Above 12 years in male	13
Above 12 years in female	12
Pregnant women	11

Anemia is caused by blood loss, decreased or faulty red cell production and destruction of red blood cells.

In general, there are three types of anemia classified according to the size of the red blood cells. They are Microcytic anemia, normocytic anemia and macrocytic anemia.

Dietary sources of iron:

Rich : Liver, egg yolk, oyster, dry beans, dry fruits, wheat germ, yeast etc.

Medium : Meat, chicken, fish, spinach, banana, apple etc.

Poor : Milk and its products, root vegetables etc.

II. METHODOLOGY

Study design: It is a prospective observational study

Study site: The present study was conducted in Santhiram medical college and general hospital, Nandyal.

Original Article

A PROSPECTIVE OBSERVATIONAL STUDY ON PREVALENCE OF HYPOTHYROIDISM IN A TERTIARY CARE TEACHING HOSPITAL

N. SWATHI^{1*}, VOLETI. VIJAYA KUMAR¹, M. FARJANA^{1*}, M. VISHNU VARDHAN¹, M. MUNENDRA¹, G. VIJAY KUMAR²

¹Department of Pharmacy Practice, Santhiram College of Pharmacy, Nandyal, Kurnool (Dist), ²Department of General Medicine, Santhiram Medical College and General Hospital, Nandyal, Kurnool (Dist)

Email: nomulanani4798@gmail.com

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ABSTRACT

Objective: To determine the prevalence of hypothyroidism in a rural population of Nandyal.

Methods: A prospective study was conducted in Santhiram medical college and general hospital, Nandyal from July 2017 to December 2017, to study the prevalence of hypothyroidism among the population.

Results: In this study, 1000 patients were evaluated for the thyroid functioning, among them n=104(10.4%) showing positive results in hypothyroidism. The positive 104 patients showed that n=63 (60.57%) of the population are in the age limit of 21-40. Out of the same population are n=11 (10.6%) are male and female are n=93 (89.43%). In age group distribution more prevalence was observed in 21-30 y of age group n=36 (34.61%). In this study, sub-clinical hypothyroidism was prevalent in females n=80 (76.92%) than males n=10 (9.61%).

Conclusion: Our study demonstrates that hypothyroidism was higher in a female with age group as 21-40 y and there is a significant prevalence of hypothyroidism in the study population.

Keywords: Hypothyroidism, Prevalence study, Chi-square test

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INTRODUCTION

Worldwide about 1 billion people are estimated to be iodine deficient however, it is unknown how often this results in hypothyroidism [1].

The Prevalence of hypothyroidism in the world is about 4-8% [1].

Thyroid diseases are the commonest endocrine disorders worldwide, India too is no exception. It has been estimated that about 42 million people in India suffer from thyroid disease. Hypothyroidism is characterized by an overt state of myxedema, multisystem failure to an asymptomatic or sub-clinical condition with normal levels of thyroxine (T4) and triiodothyronine (T3) and mildly elevated levels of serum thyrotropin [2-4].

Serum TSH measurement is the most convenient and sensitive method for screening of hypothyroidism because there is a linear relationship with serum TSH and circulating thyroid hormone level. Hypothyroidism can occur if the thyroid gland fails to work properly or if the thyroid gland is not stimulated properly by the hypothalamus or pituitary gland [5-8].

The risk of hypothyroidism is higher in people with a family history of thyroid disease and those aged over 60 y. Hypothyroidism is most commonly affects women, from middle age onwards, but it can occur at any age [9, 10]. There are no national wide studies on the prevalence of hypothyroidism from India either in the pre or post iodization periods. Hence a large cross-sectional, comprehensive and prospective study was required to provide a clear picture of the evolving profile of thyroid disorders across the whole country, especially as the country is in the post iodization era [11]. The main aim of this study was to find out the prevalence of thyroid disorder among the population of Nandyal and to create awareness among the population about the disorder so that adequate management is possible which will prevent developing of further systemic complications related to abnormal thyroid status [12].

MATERIALS AND METHODS

Study design

This was prospective, an epidemiological study conducted in Santhiram medical college and general hospital, this study was carried out from July 2017 to December 2017.

The study was reviewed and approved by Institutional Ethical committee (Registration No: IECR/05/SRMCGH/AP/2017. A total of 104 cases of thyroid abnormality were found during this study period. The data was collected from the patients that referred to a central laboratory, of our hospital for thyroid function test, which includes T3, T4 and TSH.

Enrollment criteria

All male or female subjects referred to a central lab for the thyroid function test were included. Participants were excluded if they were thyroid ablation persons and the subjects having the chronic systemic illness or if they were receiving drugs that could interfere with thyroid function test [13].

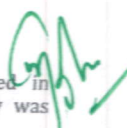
Study procedure

All the subjects underwent medical history assessment, general clinical examination, before enrollment including examination of thyroid glands. Evaluation of thyroid profile was done in the central clinical laboratory of our hospital.

Assess for thyroid hormone T3, T4, and TSH was performed by ECL technology. Based on previous thyroid history and current thyroid function test results participants were classified using following definitions like Sub-clinical hypothyroidism and overt hypothyroidism. The Prevalence of different thyroid function disorders was summarized as count and percentage. A chi-square test was used to determine the trends in the Prevalence of the disorder among different age group and genders.

RESULTS

Hypothyroidism is a lifelong chronic condition particularly prevalent in women and the elders. The present study was initiated from July 2017 to December 2017; in this study, we assessed the prevalence of hypothyroidism in all age group of patients in Santhiram general hospital. There are several important findings from this prospective analysis of 1000, subjects who underwent screening for abnormal thyroid function. Based on T3 (80-220ng/dl), T4 (4.5-11.5µg/dl) and TSH (0.5-5mIU/l) observational levels, subjects with abnormal



Principal
Santhiram College of Pharmacy
NH-40, NANDYAL

The combined effect of *Trigonella foenum* seeds and *Coriandrum sativum* leaf extracts in alloxan-induced diabetes mellitus wistar albino rats

Sree Sudha Tanguturi Yella¹, Raghupathi Niranjan Kumar², Chakali Ayyanna², Anjaly Mary Varghese³, P. Amaravathi³, Yakaiah Vangoori⁴

¹Department of Pharmacology, AIIMS Medical Institute, Raipur, Chhattisgarh, India, 492099; ²Department of Pharmacology, Santhiram College of Pharmacy, Nandyal, Andhra Pradesh, India, 518501; ³Department of Pharmacology, CES College of pharmacy, Kurnool, Andhra Pradesh, India, 518001; ⁴Department of Pharmacology, Santhiram Medical College and General Hospital, Nandyal, Andhra Pradesh, India, 518502; Sree Sudha Tanguturi Yella - E-mail: sudhambbs2010@gmail.com; *Corresponding author

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Abstract:

Diabetes mellitus is a group of heterogeneous disorders commonly presenting with episodes of hyperglycemia and glucose intolerance, as a result of lack of insulin, ineffective insulin action, and/or both. It is our interest to study the effect of ethanolic extract of *Trigonella foenum* seeds (fenugreek) and *Coriandrum sativum* leaves (dhaniya) or its combination in alloxan induced diabetes mellitus wistar albino rats. Rats were randomly separated into six groups where group 1 animals received 2% acacia, group 2 animals received alloxan dose of 150 mg/kg, group 3 animals received glibenclamide dose of 0.5 mg/kg and group 4, 5 & 6 animals received ethanolic extracts of *Trigonella foenum* seeds, *Coriandrum sativum* leaves and combination of both extracts at the dose of 100mg/kg for 21 days. Different biochemical parameters such as hepatic & renal biomarkers and histopathology of pancreas were studied. Combination of both extracts showed significant decrease in blood glucose, cholesterol, triglycerides, LDL, VLDL levels, SGOT, SGPT, urea, creatinine and increase in HDL levels and body weight than individual extracts. Thus, we show the antidiabetic activity of poly herbal formulation using biochemical and histo pathological data.

Keywords: *Diabetes mellitus*, alloxan, glibenclamide, *Trigonella foenum*, *Coriandrum sativum*

Background:

Herbals are helpful to mankind. A number of them are used for healing purpose. The importance of medicinal plants in drug discovery is highlighted by the World Health Organization (WHO). Such plants are in demand by pharmaceutical companies for their active ingredients [1, 2]. Diabetes mellitus is a disorder affecting almost 6% of the world population and the dynamics of the diabetes are changing quickly in low- to middle-income countries

[3]. It is known that 80% of the world diabetic population will be from low- and middle-income countries in 2030 as per the International Diabetes Federation's (IDF) estimates. It is one of the six major causes of death caused by various systemic problems. Diabetes mellitus is treated by hormone therapy (insulin) or by administering glucose-lowering agents such as alpha-glucosidase inhibitors, sulfonyl ureas, biguanides and thiazolidinediones.

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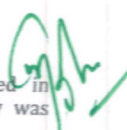
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Principal
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Keywords: *Diabetes mellitus*, alloxan, glibenclamide, *Trigonella foenum*, *Coriandrum sativum*

Background:

Herbals are helpful to mankind. A number of them are used for healing purpose. The importance of medicinal plants in drug discovery is highlighted by the World Health Organization (WHO). Such plants are in demand by pharmaceutical companies for their active ingredients [1, 2]. Diabetes mellitus is a disorder affecting almost 6% of the world population and the dynamics of the diabetes are changing quickly in low- to middle-income countries

[3]. It is known that 80% of the world diabetic population will be from low- and middle-income countries in 2030 as per the International Diabetes Federation's (IDF) estimates. It is one of the six major causes of death caused by various systemic problems. Diabetes mellitus is treated by hormone therapy (insulin) or by administering glucose-lowering agents such as alpha-glucosidase inhibitors, sulfonyl ureas, biguanides and thiazolidinediones.



Original article

A new cerebral ischemic injury model in rats, preventive effect of gallic acid and *in silico* approaches

P. Praveen Kumar^{a,*}, Madhuri D.^b, L. Siva Sankar Reddy^a, Y. Dastagiri Reddy^a, G. Somasekhar^c, N.V.L. Sirisha^d, K. Nagaraju^e, M.S. Shouib^b, A.S. Rizwaan^b

^aSanthiram College of Pharmacy, Nandyal, Kurnool, Andhra Pradesh, India

^bCreative Educational Societys College of Pharmacy, Kurnool, Andhra Pradesh, India

^cSKU College of Pharmaceutical Sciences, Anantapur, Andhra Pradesh, India

^dNitte College of Pharmaceutical Sciences, Bangalore, Karnataka, India

^eCR Reddy College of Pharmacy, Eluru, West Godavari, Andhra Pradesh, India



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ABSTRACT

Current study was designed multiple occlusions and reperfusion of bilateral carotid arteries induced cerebral injury model and evaluated the protective effect of gallic acid on it. *In silico* study was involved to study gallic acid binding affinity on cerebrotoxic proteins compared with standard drugs using *Autodoc vina tool*. Cerebral ischemia was induced by occlusion of bilateral common carotid arteries for 10 mins followed by 10 reperfusions (1 cycle), cycle was continued to 3 cycles (MO/RCA), then pathological changes were observed by estimation of brain antioxidants as superoxide dismutase, glutathione, catalase, oxidants like malonaldehyde, cerebral infarction area, histopathology, and study gallic acid treatment against cerebral injury. Gallic acid exhibited a strong binding affinity on targeted cerebrotoxic proteins. MO/RCA rat brain antioxidant levels were significantly decreased and increased MDA levels ($p < 0.0001$), Infarction size compared to sham rats. Gallic acid treatment rat brain MDA levels significantly decreased ($p < 0.4476$) and increased SOD ($p < 0.0001$), CAT ($p < 0.0001$), GSH ($p < 0.0001$), cerebral infarction area when compared to MO/RCA group. Developed model showed significant cerebral ischemic injury in rats, injury was ameliorated by Gallic acid treatment and *in silico* approaches also inhibit the cerebrotoxic protein function by targeting on active sites.

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* Corresponding author at: Head of the Department of Pharmacology, Santhiram College of Pharmacy, Nandyal, Kurnool, Andhra Pradesh, India.

E-mail address: praveenpharmaco@gmail.com (P. Praveen Kumar).

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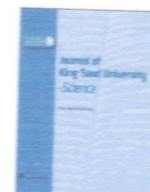
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Principal
Santhiram College of Pharmacy
NH-40, NANDYAL



Original article

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^aSanthiram College of Pharmacy, JNTUA, Nandyal, Andhra Pradesh, India

^bShri Vishnu College of Pharmacy, Bhimavaram, Andhra Pradesh, India

^cAkorn Operating Company LLC, Somerset, NJ, United States

^dCollege of Pharmacy, Uruk University, Iraq

^eNitte College of Pharmaceutical Sciences, Bangalore, Karnataka, India

^fSandip Institute of Pharmaceutical Sciences, Nashik, India

^gRasiklal M. Dhariwal Institute of Pharmaceutical Education & Research, Pune, India



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Ethanol extract

ABSTRACT

Objective: To study the immunomodulatory potential of *Albizia procera* (AP) bark using *in vivo* models and by *in silico* approach.

Methods: *In silico* models involved to study binding affinity of AP bioactive molecules on immune modified proteins such as Human NF-kappa B p52 (NFkB P₅₂), human tumor necrosis factor-alpha (TNF-α). *In vivo* studies to evaluated immunomodulatory activity of ethanolic extract AP bark (EEAP) Doxorubicin (DOX) induced immunosuppressive rats.

Results: Docking results showed AP bioactive molecules 3-O-[α-L-arabinopyranosyl-(12)-β- → D fucopyranosyl - (16) - 2 - acetamido - 2 - deoxy- β - → Dglucopyranosyl] echinocystic acid (Compound 1), 3-O-[α-L-arabinopyranosyl-(12)-β- → D fucopyranosyl - (16) - 2 - acetamido - 2 - deoxy- β - → Dglucopyranosyl] acacic acid lactone (Compound 2), Catechin, Quercetin, Isoquercetin were showed immune modulatory activity due to high binding affinity and H bonding interaction with active sites of NFkB P₅₂, TNF-α, without H bonding on anti-inflammatory cytokines IL 10. Based on docking Compound 1, Compound 2, Catechin, Quercetin, Isoquercetin were concluded as immunomodulatory potential candidate. EEAP exhibited a dose related incline in cell count of total leukocyte, neutrophils, and lymphocytes. The suppressive outcome of DOX on these cells was not reflected in EEAP treated rats. It enhanced the rate of clearance of the carbon particles in dose dependent manner from the blood circulation in both normal rats and in the immunosuppressive rats. Delayed type of hypersensitivity test (DTH) results showed an increase in footpad thickness of paw significantly in response to antigen, as an impact of EEAP treatment stimulatory response is observed on lymphocytes along with other essential cells of reaction and thus increased the cell mediated immunity.

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* Corresponding author at: Dept of Pharmacology, Santhiram College of Pharmacy, Nandyal, Andhra Pradesh, India.

E-mail addresses: praveenpharmaco@gmail.com (P.K. Pasala), rsmrp@gmail.com (M. Rudrapal).

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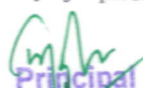
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1. Introduction

Protection mechanism that is active in defending the host from destructive foreign microorganisms is the vertebrate immune system, which has very essential surveillance control to track the integrity of host tissues (Delves et al., 2017). The characteristic feature of immunomodulator to regulate diseases is to elicit the excitation or suppression of immune responses. Literature suggests that several conventional medicines play a pivotal role in increase


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^aSanthiram College of Pharmacy, Nandyal, Kurnool, Andhra Pradesh, India

^bCreative Educational Societys College of Pharmacy, Kurnool, Andhra Pradesh, India

^cSKU College of Pharmaceutical Sciences, Anantapur, Andhra Pradesh, India

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^eC.R Reddy College of Pharmacy, Eluru, West Godavari, Andhra Pradesh, India



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* Corresponding author at: Head of the Department of Pharmacology, Santhiram College of Pharmacy, Nandyal, Kurnool, Andhra Pradesh, India.

E-mail address: praveenpharmaco@gmail.com (P. Praveen Kumar).

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Santhiram College of Pharmacy
NH-40, NANDYAL



Original article

Identification of bioactive molecules from *Triphala* (Ayurvedic herbal formulation) as potential inhibitors of SARS-CoV-2 main protease (Mpro) through computational investigations



Mithun Rudrapal^{a,*}, Ismail Celik^b, Johra Khan^{c,d,*}, Mohammad Azam Ansari^e, Mohammad N. Alomary^f, Fuad Abdullah Alatawi^g, Rohitash Yadav^g, Tripti Sharma^h, Trina Ekawati Tallei^{ij}, Praveen Kumar Pasala^k, Ranjan Kumar Sahoo^l, Shubham J. Khairnar^m, Atul R. Bendaleⁿ, James H. Zothantluanga^o, Dipak Chetia^o, Sanjay G. Walode^a

^a Department of Pharmaceutical Chemistry, Rasiklal M. Dhariwal Institute of Pharmaceutical Education & Research, Pune 411019, Maharashtra, India

^b Department of Pharmaceutical Chemistry, Faculty of Pharmacy, Erciyes University, Kayseri 38039, Turkey

^c Department of Medical Laboratory Sciences, College of Applied Medical Sciences, Majmaah University, Al Majmaah 11952, Saudi Arabia

^d Health and Basic Sciences Research Center, Majmaah University, Al Majmaah 11952, Saudi Arabia

^e Department of Epidemic Disease Research, Institute for Research and Medical Consultations (IRMC), Imam Abdulrahman Bin Faisal University, Dammam 31441, Saudi Arabia

^f National Centre for Biotechnology, King Abdulaziz City for Science and Technology (KACST), Riyadh 11442, Saudi Arabia

^g Department of Pharmacology, All India Institute of Medical Sciences, Rishikesh 249203, India

^h Department of Pharmaceutical Chemistry, School of Pharmaceutical Sciences, Siksha O Anusandhan Deemed to be University, Bhubaneswar 751003, Odisha, India

ⁱ Department of Biology, Faculty of Mathematics and Natural Sciences, Sam Ratulangi University, Manado 95115, North Sulawesi, Indonesia

^j The University Center of Excellence for Biotechnology and Conservation of Wallacea, Sam Ratulangi University, Manado, North Sulawesi 95115, Indonesia

^k Santhiram College of Pharmacy, Nandyal 518112, Andhra Pradesh, India

^l School of Pharmacy and Life Sciences, Centurion University of Technology and Management, Bhubaneswar 752050, Odisha, India

^m MET Institute of Pharmacy, Bhujhal Knowledge City, Nasik 422003, India

ⁿ Sandip Institute of Pharmaceutical Sciences, Nashik 422213, India

^o Department of Pharmaceutical Sciences, Faculty of Science and Engineering, Dibrugarh University, Dibrugarh 786004, Assam, India

^p Department of Biology, Faculty of Science, University of Tabuk, Saudi Arabia

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ABSTRACT


Severe acute respiratory syndrome coronavirus disease (SARS-CoV-2) induced coronavirus disease 2019 (COVID-19) pandemic is the present worldwide health emergency. The global scientific community faces a significant challenge in developing targeted therapies to combat the SARS-CoV-2 infection. Computational approaches have been critical for identifying potential SARS-CoV-2 inhibitors in the face of limited resources and in this time of crisis. Main protease (M^{pro}) is an intriguing drug target because it processes the polyproteins required for SARS-CoV-2 replication. The application of Ayurvedic knowledge for different target proteins of SARS-CoV-2. With this endeavor, we docked bioactive molecules from *Triphala*, an Ayurvedic formulation, against M^{pro} followed by molecular dynamics (MD) simulation (100 ns) to investigate their inhibitory potential against SARS-CoV-2. The top four best docked molecules (terflavin A, chebulagic acid, chebulinic acid, and corilagin) were selected for MD simulation study and the results obtained were compared to native ligand X77. From docking and MD simulation studies, the selected molecules showed promising binding affinity with the formation of stable complexes at the active binding pocket of M^{pro} and exhibited negative binding energy during MM-PBSA calculations, indicating their strong binding affinity with the target protein. The identified bioactive molecules were

* Corresponding authors at: Department of Pharmaceutical Chemistry, Rasiklal M. Dhariwal Institute of Pharmaceutical Education & Research, Pune 411019, Maharashtra, India (M. Rudrapal); Department of Medical Laboratory Sciences, College of Applied Medical Sciences, Majmaah University, Al Majmaah 11952, Saudi Arabia (J. Khan).
E-mail addresses: rsmrpal@gmail.com (M. Rudrapal), j.khan@mu.edu.sa (J. Khan), alatawi@ut.edu.sa (F.A. Alatawi).

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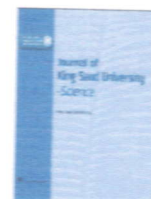
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^aSanthiram College of Pharmacy, JNTUA, Nandyal, Andhra Pradesh, India

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^dCollege of Pharmacy, Uruk University, Iraq

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* Corresponding author at: Dept of Pharmacology, Santhiram College of Pharmacy, Nandyal, Andhra Pradesh, India.

E-mail addresses: praveenpharmaco@gmail.com (P.K. Pasala), rsmrp@gmail.com (M. Rudrapal).

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Original article

Cerebroprotective effect of Aloe Emodin: *In silico* and *in vivo* studiesPraveen Kumar Pasala^a, Rizwaan Abbas Shaik^b, Mithun Rudrapal^{c,*}, Johra Khan^{d,e},
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ABSTRACT

This study involved cerebroprotective potential of aloe emodin (AE) by *in silico* molecular docking analysis against various cerebrotoxic proteins followed by *in vivo* activity on multiple occlusions and reperfusion of bilateral carotid arteries (MO/RCA) induced cerebral injury in experimental rats. Molecular docking studies were carried out to evaluate the binding affinity (or binding interaction) between AE and various proteins involved in apoptosis such as caspase-3 (CASP3) and Bcl-2-associated X protein (BAX), and proteins involved in inflammation such as interleukin-6 (IL-6), tumor necrosis factor α (TNF α), nitric oxide synthase (NOS), acid-sensing ion channel (ASIC) and glutamate receptor (GR) involved in cerebral stroke, and results were compared with that of standard drugs, minocycline, quercetin, and memantine. Cerebral ischemic reperfusion induced by MO/RCA was assessed for 10 mins reperfusion period as one cycle, and the experiment was conducted for up to 3 cycles in rats. After completion of 3 cycles, the rats were subjected to ethically acceptable animal euthanasia followed by isolation of the brains which were studied for the size of cerebral infarction, and biochemical parameters such as glutathione (GSH), malondialdehyde (MDA), catalase (CAT) were estimated from the brain homogenate. Further, histological studies were done to study neuronal contact. Results of molecular docking indicated that the AE exhibited interaction with active sites of cerebrotoxic proteins usually involved in protein functions or cerebrotoxicity. Biochemical results showed that in the untreated brain, MDA levels increased significantly, and decreased GSH and CAT levels were observed when compared to MO/RCA group, while treated rats showed a decrease in the levels of MDA and an increase in GSH and CAT levels as compared to MO/RCA rats. In comparison with sham rats and normal rats, histopathological analysis revealed neuronal damage in MO/RCA surgery rats which manifested as decreased intact neurons. However, treatment with AE 50 mg/kg b.wt. restored contact between neuronal cells. It can be concluded that AE showed cerebroprotective effect on RO/RCA with promising inhibition of cerebrotoxic proteins (apoptotic and

* Corresponding author.

E-mail addresses: praveenpharmaco@gmail.com (P.K. Pasala), rsmrp@gmail.com (M. Rudrapal), j.khan@mu.edu.sa (J. Khan), m.alaidarous@mu.edu.sa (M.A. Alaidarous), sunnykhairnar62@gmail.com (S. Jagdish Khairnar), atulbendale123@gmail.com (A.R. Bendale), vaishalinaphade587@gmail.com (V.D. Naphade), ranjankumar.sahoo@cutm.ac.in (R. Kumar Sahoo), jameshzta@gmail.com (J.H. Zothantluanga), sanjuwalode@rediffmail.com (S.G. Walode).

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Silybin phytosome attenuates cerebral ischemia-reperfusion injury in rats by suppressing oxidative stress and reducing inflammatory response: In vivo and in silico approaches

Praveen K. Pasala¹ | Ramya K. Uppara² | Mithun Rudrapal³ |
James H. Zothantluanga⁴ | Abd. Kakhar Umar⁵

¹Department of Pharmacology, Santhiram College of Pharmacy, Nandyal, Andhra Pradesh, India

²Department of Pharmacology, Creative Educational Society's College of Pharmacy, Kumool, Andhra Pradesh, India

³Department of Pharmaceutical Chemistry, Rasiklal M. Dhariwal Institute of Pharmaceutical Education and Research, Pune, Maharashtra, India

⁴Department of Pharmaceutical Sciences, Faculty of Science and Engineering, Dibrugarh University, Dibrugarh, Assam, India

⁵Department of Pharmacy, Faculty of Math and Natural Science, Universitas Tadulako, Palu City, Indonesia

Correspondence

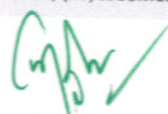
Mithun Rudrapal, Department of Pharmaceutical Chemistry, Rasiklal M. Dhariwal Institute of Pharmaceutical Education and Research, Pune, Maharashtra 411019, India.
Email: rsmrp@gmail.com

Abstract

The present study was aimed to develop silybin phytosome (SIBP) and evaluate its effectiveness against cerebral ischemia-reperfusion (CIR) injury in rats. Initially, SIBP was prepared and characterized with Fourier transform-infrared spectroscopy, differential scanning calorimetry, and scanning electron microscopy. Drug loading and entrapment efficiency of SIBP were also calculated. High-performance liquid chromatography was used to carry out bioavailability studies of SIBP. Adult Wistar rats were divided randomly into five groups. The CIR injury was induced after 14 days of pretreatment by occlusion of bilateral common carotid arteries for 30 min followed by 4 h of reperfusion. Biochemical estimation, histopathological studies, and in silico studies were carried out. Bioavailability studies revealed that SIB concentration was increased to twofolds in SIBP-treated rats. SIBP treatment significantly increases superoxide dismutase and glutathione levels while it decreases monoaldehyde, tumor necrosis factor- α (TNF- α), and interleukin 6 (IL-6) levels in both the hippocampus and cortex of the SIBP-treated CIR-injured rats. Histopathological studies reveal SIBP treatment alleviates cortex cell death and arrangement of CA1 neurons in CIR-injured rats. In silico studies against proteins (TNF- α and IL-6) involved in cerebral ischemia revealed that silybin (SIB) exhibits strong binding interaction with the target proteins when compared to thalidomide which was used as the positive control. Phytosome increase SIB bioavailability and SIBP treatment showed promising results when compared to treatment with SIB only. Based on our study, we conclude that phytosome is a suitable drug delivery agent to the brain for SIB as SIBP treatment was able to provide neuroprotective action against CIR injury.

KEYWORDS

anti-inflammatory, antioxidant, cerebral ischemia, phytosomes, silybin


Principal
Santhiram College of Pharmacy
NH-40, NANDYAL

A Comparative Study on Safety and Efficacy of Desvenlafaxine Versus Sertraline in Depression

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Saritha Ch¹, Sree Sudha², C. Gowtham Reddy¹, Pugazhenthan T³, Krishna Sasanka KSBS⁴, Pooja Dasari⁵, Pradeep Battula⁵, Nandini T⁵, Sandeep A⁵

1. Psychiatry, Santhiram Medical College and General Hospital, Nandyal, IND 2. Pharmacology, All India Institute of Medical Sciences Deoghar, Deoghar, IND 3. Pharmacology and Therapeutics, All India Institute of Medical Sciences Raipur, Raipur, IND 4. Otolaryngology, All India Institute of Medical Sciences Deoghar, Deoghar, IND 5. Therapeutics, Santhiram College of Pharmacy, Nandyal, IND

Corresponding author: Sree Sudha, sudhambbs2010@gmail.com

Abstract

Background

Depression is one of the most predominant mental health issues that are prevalent now. Therefore, many clinical trials were being conducted to find the safest, most effective, and tolerable anti-depressant. This study aims to compare desvenlafaxine and sertraline regarding their safety and efficacy in treating depression.

Methodology

The patients who were diagnosed with depressive disorder according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) criteria were included in the study and were divided into two groups. The severity of depression in these patients was evaluated using Beck Depression Inventory and Hamilton depression scale (HAM-D) before and after the treatment (four weeks).

Results

About 64% of the study sample were males, and 36% were females, with 77% of the patients in the desvenlafaxine group taking 100 mg dosage and about 74% patients taking 50 mg dosage in the sertraline group. The patients in both groups showed statistically significant ($p < 0.00001$) improvement after using these drugs.

Conclusion

Both desvenlafaxine and sertraline showed their efficacy in treating depression by improving the clinical outcome in patients. Sertraline was marginally better in clinical results. Finally, it is advisable to carry out more randomized trials to improve the patient's quality of life.

Categories: Neurology, Psychiatry, Psychology

Keywords: becks depression inventory and ham-d scales, dsm-v criteria, depression, desvenlafaxine, sertraline


Introduction

In a person's lifetime, the estimated occurrence of at least one episode of major depressive disorder is about 17% [1]. This occurrence causes psychiatrists and physicians to encounter this disorder often in their clinics. Patients suffering from depression not only experience difficulties in their social functioning but also have impaired work output [2-3]. All this has led to the recognition of depression as the fourth most leading disability globally [4]. It has been established that the primary choice in the management of depression is pharmacotherapy [5]. Antidepressants are also used to treat chronic pain, which can result in depression [6-7]. The prescriptions for treating depression mainly include second-generation antidepressants like selective serotonin reuptake inhibitors (SSRIs), serotonin and norepinephrine reuptake inhibitors (SNRIs), and other drugs that selectively target neurotransmitters [8]. SSRIs are also combined with antipsychotics to treat bipolar depression [9]. Depression is most commonly treated in three divided stages - acute, continuation, and maintenance phases [10]. From the presentation of symptoms to eliciting a clinical response comprises the acute phase. It has now been recommended to have at least six months of continuation therapy. In the maintenance phase, the psychiatrist aims to prevent the occurrence of another episode [11-12].

The improved safety and tolerability of SSRIs and SNRIs caused them to gain popularity in treating depression over the older tricyclic antidepressants [13]. Sertraline belongs to SSRIs which inhibit only serotonin reuptake. At the same time, desvenlafaxine has dual-acting properties as it can block the reuptake of serotonin and norepinephrine and belongs to SNRIs [14-15]. It has been found that there is dysregulation of serotonin and norepinephrine neurotransmitter systems in patients suffering from depression [16].

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Principal
Santhiram College of Pharmacy
NH-40, NANDYAL



A Study on Prescribing Patterns and Assessing the Functional Outcomes in Cerebral Stroke Patients

Pradeep Battula^{a*}, Nandini Pandey^a, N. Yamini Sarojini^a, C. Bhargav Reddy^a,
K. Anil Kumar^b and R. E. Ugandar^a

^a Department of Pharmacy Practice, Santhiram College of Pharmacy, Nandyal, India.

^b Department of Neurology, Santhiram Medical College & General Hospital, Nandyal, India.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Short Research Article

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ABSTRACT

Cardiovascular diseases and Cerebro-vascular diseases account for majority of the burden of NCDs. Stroke is one the major component of these, posing public health challenges. 1 in 6 people suffer with stroke in their life time. The impact of stroke can be short or long term, depending on which part of the brain is affected and how quick it is treated. This hospital based case study was undertaken with aim to study the prescribing pattern and the functional outcomes in cerebral stroke. Study was carried out in the Santhiram Medical hospital, Nandyal, Andhra Pradesh, India.

Methodology: Patients visiting the neurology clinic were asked to answer the questionnaire covering functional outcomes by using functional assesment scales to determine the clinical status of the patient; Most of the patient's data were collected from case sheets. A total of 150 patients were included in the observational study. Data from case sheets were analysed to assess the prescribing pattern and the questionnaires like mRS, SSQOLS, MMSE scales were used to interview the stroke patients to assess the functional outcomes.

Results: Our study presents that there is a minimal Modified Rankin Scale (MRS) score progress in patients. MRS, SSQOL, MMSE scales, which showed improvement in the quality of life and cognition in stroke patients after treatment.

*Consultant Physician;

*Corresponding author;

E-mail: yamini4nandvelugu@gmail.com;



A Prospective Observational Study on Evaluation of Therapeutic Efficacy of Antiplatelets in Coronary Artery Disease with Percutaneous Transluminal Coronary Angioplasty

C. Bhargava Reddy^{1*}, T. Akhila Saila Sree¹, K. Samyuktha¹,
D. Kranthi chaitanya², R. E. Ugandar¹ and C. Madhusudhana Chetty³

¹Department of Pharmacy Practice, Santhiram College of Pharmacy, Nandyal, Kurnool (dt),
Andhra Pradesh, India.

²Department of Cardiology, Santhiram Medical College and General Hospital, Nandyal, Kurnool (dt),
Andhra Pradesh, India.

³Principal of Santhiram college of Pharmacy, Nandyal, Kurnool (dt), Andhra Pradesh, India.

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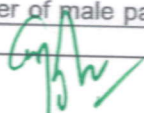
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ABSTRACT

Coronary artery disease otherwise named as Coronary heart disease. Coronary Artery Disease means narrowing of the coronary arteries. This narrowing causes reduction of blood flow to the heart muscle by buildup of plaque in the arteries of heart. A common symptom of Coronary artery disease is chest pain or chest discomfort which can travel to the shoulder, arm, back, neck or jaws. Other symptoms may include Shortness of breath, palpitations and even fatigue. Majorly antiplatelets are given in the treatment of CAD and followed by angioplasty for the clearing of plaques in the coronary artery. Collected a sample size of 200 patients, among them 126 are males and 74 are females. Patient with age group of 51-60 are more prone to CAD in both males and females. Chest pain is majorly seen in males compared to females. Chest pain, Sweating and shortness of breath is seen in both males and females and the number of male patients are more

*Corresponding author: E-mail: akhilasailasree@gmail.com;


Principal
Santhiram College of Pharmacy,
NH-40, NANDYAL