CHAPTER 35

MEDICAL SCIENCES
PHARMACOLOGY

Doctoral Theses

01. BABITA

A Clinical Study to Evaluate the Effects of Yoga on Pulmonary Functions, Cellular and Molecular Markers and Quality of Life in Patients of Bronchial Asthma.

Supervisors : Prof. Kavita Gulati and Prof. A. Ray

Th 24208

Abstract
(Not Verified)

The study was a randomized, prospective, parallel design clinical study conducted as per ICHGCP guidelines after approval by the Institutional Ethical Committee of VPCI. The patients with clinical diagnosis of bronchial asthma were recruited as per the inclusion criteria and randomized into Group I which was on conventional treatment (long acting β2-agonist + inhaled corticosteroids + SOS SABA) for 3 months and Group II which was given additional yogic intervention for 50 minutes daily. The patients were physically examined and baseline parameters of PFT (spirometry), frequency of asthma exacerbations, blood cell counts, oxidative stress markers, inflammatory markers and Quality of life were assessed and followed up at 4 , 8 and 12 weeks. The comparison of parameters was done between Goup I and Goup II of respective treatments. The results showed that PFT values, GSH, SOD levels were significantly improved whereas proinflammatory markers, IL-6, TNF-α and MDA were reduced in both the groups, but the modulations were remarkably more in Goup II. Further, Goup II showed effective and consistent decrease in absolute eosinophils and neutrophils count, thus indicating the anti-inflammatory role of Yoga in bronchial asthma patients. This was corroborated by significant reduction in SOS use of emergency inhaler and improvement in quality of life in Group II patients as assessed by Asthma Quality of life Questionnaire. The results suggest the potentiating effects of yogic intervention when given as an adjunct to conventional therapy. It is concluded that introducing Yoga as adjunct therapy in patients of bronchial asthma improved asthma symptoms and the quality of life, which may possibly be mediated by restoration of pro-oxidant antioxidant balance and modulation of cellular and molecular markers of inflammation and immunity.

Contents

02. BHATT (Nidhi)
Oral Delivery of Protien/Peptide Design, Development & Evalution.
Supervisor : Dr. Meenakshi Chauhan
Th 24204

Contents

1. Introduction. 2. Literature review 3. Drugs and excipients 4. Research envisaged 5. Materials and methods 6. Results and discussion 7. Conclusion and future scope. Publication, references, appendix

03. LATHA S.
Pharmacological Screening of Some Indian Medicinal Plants Anticancer and Antiangiogenic Activites
Supervisor : Dr. Rajni Mathur
Th 24298

Contents

1. Introduction. 2. Review of literature 3. Rationale of the study 4. Aims and objectives 5. Materials and methods 6. Results 7. Discussion 8. Summary 9. Conclusion 10. Bibliography 11. Appendices 12. List of publications.

04. NAQVI (Maaz)
Experimental Pharmacological Studies for the Optimization of Constituents of UNIM-352, a Polyherbal Preparation, for Efficacious and Safe Treatment of Bronchial Asthma
Supervisors: Prof. Kavita Gulati and Prof. A. Ray
Th 24300

Contents

1. Introduction 2. Review of literature 3.Aims and objectives 4. Material and methods 5. Resutls 6. Discussion 7. Summary and conclusion 8. Bibliography 9. Appendix.

05. NAIR (Jayachandran)
Pharmacokinetic and Pharmacodynamic Evaluation of Medicinal Plant Extract in Rodent Model of Fructose Induced Metabolic Syndrome.
Supervisors : Dr. Rajni Mathur and Prof. Thirumurthy Velpandian
Th 24299

Abstract
(Not Verified)

Metabolic syndrome (MS) is a complex pathological state wherein insulin resistance (IR) is central. The effect of fructose consumption during developing years are not known. In the present times, the herbal compounds enjoy popularity as therapeutic agents. The present study involved the assessment of the protective effect of Aeglemarmelos(AM), Psidiumguajava(PG)and Nigella sativa (NS) against fructose-induced hepatic IR. Post-weaning (4 weeks old) male Wistar rats were provided fructose(15%) and studied for 4&8 weeks for alteration in hepatic metabolic milieu. The extracts of AM,PG,NS were given orally as treatment and also their PK parameters were also studied using rutin(Ru),quercetin(Qu) ,thymoquinone(Tq) as biomarkers. Further, polarity based fractions of the extracts were also pharmacodynamically investigated using HepG2 cells grown in fructose.

The invitro and invivo results confirmed that fructose intake during adolescence induces alterations and early onset of MS. The Ru, Qu, Tq shown good PK profile. A significant increase in body weight, total calorie intake, liver glycogen, plasma insulin&leptin, HOMA-IR and TG due to fructose intake was recorded. An increase in HK, PFK and ALDH activity, 2° messengers PI3K, STAT-3 and mTOR suggesting de novo lipogensis was recorded. Additionally factors for hypoxia and inflammation were raised due to fructose. The histopathological and TEM assessment of liver sections of fructose-drinking rats (FDR) indicated the presence of fatty microvesicular changes. The AUC-OGTT&ITT were significantly raised in FDR as compared to control. The FDR also showed greater hepatic GLUT2 expression. The AM, PG and NS favorably reversed the pathologies induced by fructose. Acute and chronic consumption of high fructose during developing years initiates alterations in the biochemical, hormonal, metabolic and morphologic milieu that may set the chain of pathological events leading to early onset of the diseased state and selected extract AM, PG and NS may possess a beneficial role in MS.

Contents