

## CHAPTER 39

### MEDICAL SCIENCES PHYSIOLOGY

#### Doctoral Theses

435. ADILA PARVEEN  
**Free Radical Mediated Cardiovascular Dysfunction in Chronic Heart Failure : Molecular and Systemic Mechanisms.**  
Supervisors : Dr. Rashmi Babbar, Prof. M Fahim,  
Dr. Sarita Agarwal and Dr. Anita Kotwani  
Th 18137

#### *Abstract*

The present study validate that chronic heart failure is associated with impairment of hemodynamic functions, neural control mechanisms along with increased free radical generations and inflammatory stress. Altered lipid profile and histological changes in cardiac tissue and aorta further indicate cardiovascular dysfunction. However, therapeutic and prophylactic treatment with Terminalia arjuna bark extract offers significant improvement in cardiovascular functions as observed with known cardioprotective synthetic drug fluvastatin. Scavenging of free radicals by antioxidant nature, anti-inflammatory action with inhibition of pro-inflammatory cytokines and hypocholesterolemic property of Terminalia arjuna might have attributed to its overall cardioprotective action. Thus Terminalia arjuna bark extract may serve as an alternative prophylactic and therapeutic agent to synthetic drugs for prevention and treatment of chronic heart diseases.

#### *Contents*

1. Introduction. 2. Aims and objectives. 3. Review of literature. 4. Materials and methods. 5. Results. 6. Discussion. 7. Summary and conclusions. 8. References.

436. BHAGAT (Ruchi)  
**High Altitude Simulation on Lung Physiology and Vagal Afferent Activity.**  
 Supervisors : Dr. S B Singh and Dr. K Ravi  
 Th 18034

*Abstract*

Attempt to observe the behaviour of RARs in rabbits which are exposed to a high altitude of 15,000 feet for 12 hrs and 36 hrs. Their responses to SP and CGRP in these backgrounds have been investigated. The study has been extended to a situation in which the left atrial pressure increases in the physiological range (2-5 mm Hg). The RARs have been selected as they are more sensitive to fluid in the pulmonary extra-vascular space. The results from this study may explain the sensory mechanism for the respiratory symptoms associated with high altitude exposure.

*Contents*

1. Introduction. 2. Review of literature. 3. Hypothesis. 4. Aims and objectives. 5. Materials and methods. 6. Results. 7. Discussion. 8. Summary and conclusions.

437. MEHTA (Ashish K)  
**Central and Peripheral Interaction of Opioid and NMDA Receptors in Neuropathic and Inflammatory Pain and their Role in Antinociception from Stimulation of Periaqueductal Gray in Male Rats.**  
 Supervisors : Prof. O P Tandon and Dr. Naresh Khanna  
 Th 18101

*Abstract*

The present study is undertaken to investigate : The interaction between the opioid and NMDA receptors, their actions in the various brain regions, especially in the central PAG in neuropathic pain by electrically stimulating these areas and the effects of different ligands which affect opioid and NMDA system using heat hyperalgesia as a model of pain sensitivity.

*Contents*

1. Introduction. 2. Aims and objectives. 3. Review of literature. 4. Materials and methods. 5. Results. 6. Discussion. 7. Summary and conclusions.

438. SONI (Ritu)  
**Effect of Pranayama and Yoga Asanas on Lung Functions and Diffusion Capacity in Chronic Obstructive Respiratory Diseases.**  
Supervisors : Dr. Savita Singh, Dr. O P Tandon and  
Dr. Sunil Agarwal  
Th 18035

*Abstract*

Compares quality of life, pulmonary functions along with diffusion capacity in patients of bronchial asthma on conventional drug therapy, before and after yogic interventions of 2 months and chronic obstructive pulmonary disease (COPD) conventional drug therapy.

*Contents*

1. Introduction. 2. Aims and objectives. 3. Review of literature. 4. Materials and methods. 5. Results. 6. Discussion. 7. Summary and conclusions.