Pathophysiological conditions of heart like cardiac ischaemia, myocardial infarction etc. are often associated with gastrointestinal, cardiovascular and urinary symptoms. Patients with acute myocardial ischaemia often feel urge for urination and defecation along with cardiac pain. The process of urination is a complicated process comprising of storage and evacuation of urine. The storage of urine in the urinary bladder is, in turn, dependent upon the renal function. So, attempts have been made to study the neural mechanism underlying this clinically manifested symptoms inducing experimental cardiac ischaemia by occlusion of the left anterior descending coronary artery (LAD) in lightly anaesthetised cats. It is well known that cardiac ischaemia leads to synthesis and release of various algesic agents like prostaglandins, bradykinin, lactic acid etc. which stimulate cardiac nociceptors. So, attempts have also been made to study the changes of urinary bladder (vesicular) motility as well as the renal function by stimulating the ventricular nociceptors with a potent algesic agent nicotine which leads to synthesis of prostaglandin E series in the cardiac muscles.

With this perspective in mind the author has made a short review of the upto-date knowledge on these aspects and the review is presented in Chapter-1. The materials required and the methods adopted for the study has been presented in Chapter-2.

To produce the prototype clinical manifestation of the cardiovesicular reflex, the author performed LAD occlusion or epicardial application of nicotine and the results obtained have been presented in Chapter-3. In the same chapter, the neurotransmitters involved in manifestation of the reflex have also been presented.

The heart is innervated by both vagus and sympathetic nerves. The cardiac receptors send informations through these nerves to the spinal and supraspinal centres and thereby modulate different cardiogenic reflexes. So, attempts have been made to study the afferent pathway of the cardiovesicular reflex, the results of which are presented in Chapter-4. The influences of spinal and supraspinal centres in modulating the reflex have also been presented.
The efferent pathway for the manifestation of such cardiovesicular reflex have been discussed in Chapter-5.

The urge for urination is dependent upon the storage and consequent distension of the bladder. It is also well documented that the urine formation by the kidney is very much influenced by the cardiac receptors. So, in the Chapter-6, the author has attempted to investigate the changes in renal diuretic functions in response to LAD occlusion or epicardial nicotine application and also the neurotransmitters involved in manifestation of the reflex.

In the next chapter (Chapter-7) the afferent and efferent pathways involved in the reflex alteration of the renal functions discussed in chapter-6 have been presented.

In the Chapter-8, the author has tried to investigate whether there is any relation in between the reflex changes of functions of the two organs - the urinary bladder and the kidney in response to cardiac receptor stimulation and the results are incorporated in this chapter.

Thus the author has tried her best to investigate the role of ventricular receptors in manifestation of the vesicular and renal abnormalities and the neural and pharmacological mechanisms involved in it. The author hopes that the facts presented in this thesis will add further, though little, to the existing knowledge, in the field of cardiovascular physiology.