Research interest:

The most significant and overlooked complication of diabetes is to increase the chance of developing cardiovascular autonomic neuropathy (CAN) which may lead to high risk of cardiovascular disease. Hyperglycemia can damage autonomic nerve fibers that innervate heart and can cause an imbalance in the activation of the heart leading to cardiac autonomic dysfunction. Diabetic neuropathies, including CAN, are the most common chronic complications of diabetes type 1 and type 2, associated with the damage of nerve fibers innervating heart. Despite of its high prevalence in diabetes, CAN is the most underdiagnosed and undertreated complication because of its pleomorphic clinical manifestations which appear in later stages of the disease. Early diagnosis will be the key factor for better prognosis and treatment regimen.

Targeting neuropeptides and their signaling pathways might thus serve as new therapeutic interventions in the treatment of CAN and can improve our understanding of diabetic neuropathies. It may lead to cardiac autonomic neuropathy associated with damage of nerve fibers innervating heart. To improve our understanding of CAN pathophysiology and develop innovative and effective immunoassays for early prediction of CAN in diabetic patients, the main objective of the study is to investigate the role of neuropeptides and their receptors involved in signaling system or identification of pathogenic autoAbs of neuropeptides involved in diabetic neuropathy.

Shashank Pandey