Quantitation of Postganglionic Sudomotor Function

Phillip A. Low, B. Zimmerman, Peter James Dyck

Quantitation of cardiac vagal abnormalities can be accurately done using heart period measurements. Measurements of postganglionic sudomotor failure is now possible using the quantitative sudomotor axon reflex test (Q-SART). We performed Q-SART measurements on the forearm and proximal foot of 38 patients with diabetic neuropathy and 62 controls. These results were compared with HP measurements on the same patients. Responses to deep breathing (DB) and Valsalva maneuver (VM) were determined and BP was measured supine and standing.

HP responses were abnormal to DB and VM in 71% and 63% of diabetics; both tests were abnormal in 58%. The Q-SART was abnormal in the foot in 66% of diabetics. Results of HP and Q-SART recordings were concordant in 66% of patients. 18% had abnormal HP but normal Q-SART recordings while 11% had abnormal Q-SART but normal HP. 31% of patients who had an abnormal Q-SART did not OH.

We conclude that both HP and Q-SART measurements should be done since 1) they measure different autonomic fiber populations and since 2) abnormalities will be missed if only one set of test is used.

References