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## **HIV/AIDS Leads to Early Cardiovascular Autonomic Neuropathy**

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**Introduction.** Chronic disease is known to lead to early cardiovascular autonomic neuropathy (CAN). CAN indicates risk for sudden cardiac death (SCD). Autonomic dysfunction (AD), defined as abnormal autonomic or sympathovagal balance (SB, normal =  $0.4 < SB < 3.0$ ) prior to CAN is asymptomatic. AD is associated with greater morbidity and mortality. Early intervention provides Physicians with more therapy options. Treating AD by restoring balance between parasympathetics (P) and sympathetics (S) reduces morbidity and mortality. CAN with high SB indicates high risk of SCD. Early intervention, based on early testing is justified based on the diagnosis of chronic diseases, like HIV/AIDS. Our hypothesis is that HIV/AIDS leads to early AD. **Methods.** Autonomic profiling of 232 consecutive patients (47 Female) was performed with ANSAR (Philadelphia, PA) at an ambulatory clinic in Missouri. HR variability and respiratory activity data were collected concurrently, and analyzed independently and simultaneously to compute P&S activity. The results were analyzed and presented here against 234 aged-matched normals from our nation-wide database.. **Results.** The data shown in the Figure have been normalized at age 25 and plotted on a logarithmic scale. The level that defines CAN ( $P$  activity =  $0.1 \text{ bpm}^2$ ) is shown on the plot. Note that upon first diagnosis (approximately age 25 on average), patients' autonomic levels are near normal with SB (1.77). Within one decade patents are near CAN (see insert on linear scale), presenting with advanced AD and high SB (5.30). At age 55 patients present with CAN with continued high SB (3.60). Normal subjects present with CAN around age 75, yet with normal SB (1.66) which mitigates the risk. **Conclusions.** Patients present earlier than normals with AD and CAN. Patients also present with high SB as compared with normal suggesting that patients are at higher risk for SCD, increased morbidity, and greater healthcare costs due to a greater number of medications and hospitalizations.

# Age-Matched HIV

