

Abstract No. **9**

Category: **Arrhythmias and Clinical EP**

Title: **Autonomic Tone Modulation and Night Shift Work: a Prospective Study in Medical Residents in Medellin, Colombia**

Primary Author: **Mauricio Duque**

Abstract:

Aim: To evaluate alterations in heart rate variability (HRV), repolarization, and cardiac rhythms in medical residents working night shifts in Medellin, Colombia, by using Holter monitoring as an indirect, non-invasive measure of autonomic tone.

Materials and results: This was a descriptive, observational study, in which 48-hour Holter monitoring parameters were evaluated and compared in medical residents before, during, and after working night shifts. Data were analysed in four 12-hour periods: Period 1: night before night shift or 24 to 12 hours before night shift initiation; period 2: day of night shift (12 hours before night shift initiation); period 3: during night shift work (12 shift hours); and period 4: 12 hours post-shift. A total of 52 residents of clinical and surgical residency programs were included in this study. Mean age was 28 years, 59.6% were female, and 77% were enrolled in public universities. A total of 45 hours of Holter monitoring data per resident were recorded and analysed. Heart rate variability decreased significantly ($p < 0.0001$) during period 2 (day of night shift), with an additional –yet less pronounced– decrease during period 3 (night shift work).

Conclusions: Medical residents working the night shifts exhibited a decrease in HRV during periods 2 (before shift) and 3 (during shift), being more evident during period 2 (anticipatory phenomenon). This change in HRV is due to decreased in parasympathetic activity, however remaining within the normal range. Future additional studies are required in order to determine the long-term effects of HRV variation.