

Increased blood pressure during the suggested immobilization test in restless legs syndrome

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Objectives: To investigate the relationship between sensory discomfort, leg movements and cardiovascular autonomic response during a one-hour suggested immobilization test (SIT) in drug-free adult patients with restless legs syndrome (RLS).

Methods: Thirty-two drug-free patients with primary RLS (10 men; mean age 60.29±10.81 years) and 17 healthy controls (2 men; mean age 58.82±11.86 years) underwent a SIT starting at 8:00PM and a concomitant continuous beat-to-beat blood pressure monitoring (CBPM), to measure the heart rate (HR) and systolic/diastolic blood pressure (SBP, DBP). In all subjects, the presence of sensory discomfort and motor components during the SIT (S-SIT+ and M-SIT+, respectively) was quantified. Mixed regression models were used to compare the SBP, DBP and HR profiles during the SIT by taking into account the repeated measures (six time periods of 10 minutes).

Results: Seventeen patients had S-SIT+. In these patients, SBP ($p<0.0001$), DBP ($p=0.0007$) and HR ($p=0.03$) increased during the SIT compared with asymptomatic patients and controls. Seventeen patients had M-SIT+ (none among healthy controls). Classifying patients in four groups, in function of the presence/absence of the SIT sensory and motor components, revealed that SDB and DBP increased throughout the SIT in patients with S-SIT+, independently of the motor component ($p<0.0001$ and $p=0.0008$ for SDB; $p<0.0001$ and $p=0.01$ for DBP in the S-SIT+/M-SIT- and S-SIT+/M-SIT+ groups, respectively).

Conclusion: During the SIT, BP increased only in patients with RLS and sensory discomfort, with or without motor components. This highlights the link between evening sensory RLS symptoms, autonomic activation, and potential long-term cardiovascular consequences.