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## **Abstracts**

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## AUTONOMIC FUNCTIONS AMONG FUEL HANDLERS IN THE GAMPAHA DISTRICT

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**Introduction and objectives:** Economic growth of Sri Lanka has increased the number of motor vehicles. Fuel stations employing more fuel handlers have been established to cope with the demand. The long working hours with exposure to hydrocarbon fuels result in adverse health effects and this study was done to assess the cardiovascular autonomic functions (ANF) including heart rate variations (HRV).

**Method:** Fifty fuel handlers from the Gampaha district of Sri Lanka (19-65 years; all were males) from 7 fuel stations were recruited using consecutive sampling and compared with 46 age and gender matched individuals without occupational exposure to fuel (controls). Demographic data were collected after obtaining informed written consent and systematic examination was conducted. ANF assessment and HRV assessment were performed using validated protocols.

**Results:** There were no significant differences in age, weight, height or the BMI among the study and the control populations ( $p > 0.05$ ). Both systolic blood pressure (BP) (Mann Whitney U (MW)= 743.5,  $p = 0.003$ ), diastolic BP (MW= 686.5,  $p = 0.001$ ) and Valsalva ratio (MW= 874.00,  $p = 0.043$ ) were significantly higher among the fuel handlers compared to the controls. Rise in DBP in sustained handgrip, a sympathetic parameter was significantly higher among controls (MW= 863.00,  $p = 0.049$ ). Among HRV parameters, standard deviation of RR intervals was higher among the fuel handlers compared to controls (MW=842.00,  $p = 0.034$ ). Parasympathetic parameters correlated with exposure hours per week ( $p < 0.05$ ).

**Conclusion:** Altered sympathetic: parasympathetic balance was observed among the fuel handlers with a parasympathetic predominance suggesting that autonomic functions are affected on exposure to air pollution and hydrocarbons.