

# 2<sup>nd</sup> WORLD HEART CONGRESS

May 14-16, 2018 Tokyo, Japan

## Systolic and diastolic blood pressure determinants of shock patients

**Rabindra Nath Das**

University of Burdwan, India

**Background:** Previous research reports have discussed a little about the determinants of the systolic and diastolic blood pressure of shock patients. There is not any detailed discussion about the determinants of the systolic and diastolic blood pressure of shock patients.

**Objective:** There is a close relationship between hypertension and blood pressure, while hypertension is correlated with stroke. The explanatory factors or the determinants of the systolic and diastolic blood pressure of some shock patients are examined in the current report.

**Materials & Methods:** The Shock Research Unit, the University of Southern California, Los Angeles, California has collected the shock data set on 113 shock patients with 20 variables/factors. The considered study responses namely, systolic and diastolic blood pressure is positive with non-constant variances and they belong to exponential family. These type of responses should be analyzed using joint generalized linear gamma or Log-normal models.

**Results:** For the shock patients, mean systolic blood pressure (SBP) is lower for taller patients ( $P < 0.001$ ) than shorter. Mean SBP is higher for female shock patients ( $P = 0.013$ ) than male, or survived shock patients ( $P = 0.024$ ) than who are close to death. Mean SBP increases if mean arterial blood pressure (MAP) ( $P < 0.001$ ), or heart rate (HR) ( $P = 0.004$ ), or body surface index (BSI) ( $P = 0.003$ ), or appearance time (AT) ( $P = 0.004$ ) increases. Mean SBP increases if diastolic BP ( $P < 0.001$ ), or hemoglobin (HG) ( $P = 0.005$ ) decreases. Variance of SBP increases if age ( $P = 0.069$ ), or height ( $P = 0.022$ ), HR ( $P = 0.052$ ), or mean central venous pressure (MCVP) ( $P = 0.001$ ) increases. Also the SBP variance increases if the shock type is at hypovolemic=2 ( $P < 0.001$ ), or other (cardiogenic, or bacterial, or neurogenic, or other) ( $P < 0.001$ ). In addition, SBP variance increases if MAP ( $P < 0.001$ ), BSI ( $P = 0.086$ ), or cardiac index (CI) ( $P = 0.080$ ) decreases. Again, the mean diastolic blood pressure (DBP) increases if height ( $P = 0.081$ ), or MAP ( $P < 0.001$ ), or HR ( $P < 0.001$ ), AT ( $P = 0.043$ ), or HG ( $P = 0.077$ ) increases. Also the mean DBP increases if SBP ( $P < 0.001$ ), or plasma volume index (PVI) ( $P = 0.069$ ) decreases. The DBP variance increases if age ( $P < 0.001$ ), or height ( $P < 0.001$ ), or PVI ( $P < 0.001$ ) increases. Moreover, the DBP variance increases if CI ( $P < 0.001$ ), or mean circulation time (MCT) ( $P = 0.012$ ) decreases.

**Conclusion:** The explanatory factors of SBP and DBP have been derived for some shock patients, and it is noted herein that SBP and DBP are inversely correlated, but they are generally positively correlated for normal and cardiac patients. The reported results are completely new inputs in the shock patients study literature.

rabin.bwn@gmail.com

## Notes: