SUMMARY

**Background:** Several observational studies have reported on the relationship between admission blood pressure, pulse pressure and subsequent outcome in stroke. There is the need to determine the relationship of admission blood pressure on clinical outcome in acute ischemic stroke in our stroke population.

**Aims and Objectives:** This study aims to determine the influence of admission blood pressure on case fatality and functional outcome in acute ischemic stroke.

**Methods:** 120 Consecutive patients who presented with clinical and/or brain CT scan diagnosis of first ever acute ischemic stroke with a mean duration of onset of 52hrs ± 30.2 were enrolled into the study. An interviewer administered questionnaire which contained relevant clinical details was used to record necessary clinical and diagnostic parameters prospectively. Patients with repeat or recurrent stroke were excluded. Blood pressure was determined on admission and SBP, DBP, MABP and PP were recorded. The case fatality rate as well as the functional outcome using the GOS, were determined on days 7, 14 and 30, respectively.

**Results:** The case fatality rates were, 8%, 15% and 19%, on the 7th, 14th and 30th day of admission respectively. Case fatality on the 7th day was associated with mean SBP, DBP, MABP and PP of 126, 71, 89 and 55mmHg, respectively. Case fatality in the second week was associated with mean SBP, DBP, MABP and PP of 206, 118, 147 and 88mmHg respectively. Case fatality between the 14th and 30th day was
associated with mean SBP, DBP, MABP and PP of 203, 116, 145 and 87mmHg respectively. However for those that were alive on the 7th, 14th and 30th day (97 altogether), the mean SBP, DBP, MABP and PP were 187, 111, 136 and 76mmHg respectively.

SBP of between 160-169mmHg, and DBP of 100-109mmHg was associated with favourable outcome (GOS 1 and 2), on days 7, 14 and 30 respectively, (p-values <0.05). SBP of >/180mmHg and DBP >/110mmHg was however associated with unfavourable outcomes on days 7, 14 and 30 respectively (p-values <0.05). MABP of <110mmHg was associated with unfavourable outcome on days 7, 14 and 30 days respectively, (p-values <0.05). MABP of between 110-129mmHg was associated with favourable outcomes on 7, 14, and 30 days respectively (p-value <0.05), while MABP >/145mmHg was associated with unfavourable outcomes on days 7, 14 and 30, (p-values <0.05).

Pulse pressure (PP) of <60mmHg, was associated with favourable outcomes on days 7, 14 and 30 respectively (p-values <0.05), while PP >/ was associated with unfavourable outcomes on 7,14 and 30 days respectively (p-values <0.05).

**Conclusion:**

In accordance to several previous reports that the relationship between admission SBP, DBP, MABP and case fatality and functional outcome is not linear. The described U-shaped relationship in this study appears to relate BP to clinical outcome with the best outcome observed in moderately elevated
admission blood pressure values, suggesting that both extremely elevated blood pressure and normal-low normal B.P values are likely to affect outcome adversely.

In addition, pulse pressure values within the normal range was associated with favourable clinical outcome, while elevated pulse pressure values were associated with adverse clinical outcome in terms of case fatality and functional outcome.