

4th International Conference on

Obstetrics and Gynecology

November 14-15, 2019 | Singapore

Hypertensive disorders of pregnancy are associated with an inflammatory state: Evidence from hematological findings and cytokine levels

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Abnormalities of blood cell counts and of cytokine profiles in women with hypertensive disorders of pregnancy (HDP) have been reported in several studies. Although their cause-effect relationships to HDP are not yet clear, detecting and monitoring these alterations can be of use for prognosis and management of HDP. This study aimed to determine hematological, coagulation and cytokine profiles in hypertensive as compared to normotensive pregnancy and identifying correlations between these profiles. Hospital-based comparative cross-sectional study conducted from September 2017 to February 2018. There were two groups: normotensive pregnant women (n=77) attending the antenatal clinic and hypertensive pregnant women (n=76) admitted to the maternity block of Muhimbili National Hospital. Hematological and cytokine parameters were compared between these groups using Student's independent t-test when the data were normally distributed; and the Mann-Whitney U-test when the data were not normally distributed. Kruskal Wallis with Dunn's multiple comparison tests was run for subgroup analysis and correlation studies were done using Spearman ranking. Hemoglobin levels were slightly but significantly lower, ($P < 0.01$) in women with HDP compared to normotensive (N)

women; the same was true for platelet counts ($P < 0.001$). The red cell distribution width (RDW) was slightly but significantly higher in HDP than in normotensive. Neutrophil counts and Interleukin 6 (IL-6) levels were significantly ($P < 0.001$) higher in HDP than in normotensive; and within HDP IL-6 levels increased with increasing severity of HDP. A novel remarkable finding was that eosinophil counts, normal in normotensives, were lower and lower with increasing severity of HDP, to the point that they were nearly absent in women with eclampsia. There are significant changes in hematological, cytokine and coagulation parameters in pregnant women with hypertensive disorders compared to normotensive pregnant women. The picture that emerges is that of an inflammatory state associated with hypertensive disorders of pregnancy.

Speaker Biography

Mtali Y S has a Bachelor of Science in health laboratory science and recently defended his master's by research in Hematology at Muhimbili University of Health and allied sciences. He also serves as Tutorial assistant at the same university. He is an eminent researcher with one publication in a peer-reviewed journal and a member of Muhimbili university scientific conferences organizing committee.

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