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## The role of follistatin in HIV-associated pre-eclampsia

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KwaZulu-Natal has a high burden of HIV infection and high blood pressure, specifically pre-eclampsia (PE) in pregnancy. Follistatin (FS) is an extracellular glycoprotein antagonist of the ligand receptor, Activin-A, involved in PE pathogenesis. In light of the high maternal mortality and morbidity in SA, we investigated the expression of FS in the duality of HIV-associated PE. Therefore, the aim of this study was to investigate the role of FS in HIV-associated PE using the Bioplex Multiplex Immunoassay. The methodology used -serum samples of normotensive and pre-eclamptic women stratified by HIV status were collected from a large regional hospital in Durban, and their FS expression was analysed using the Bio-Plex<sup>®</sup> Pro<sup>™</sup> Human Cancer Biomarker Panel 1. Our results revealed that irrespective of HIV status, FS expression was significantly reduced in pre-eclamptic compared to normotensive pregnancies ( $2354 \pm 353.6$  vs  $649.5 \pm 116.8$ ;  $p < 0.001$ ). However, FS expression did not differ between HIV +ve vs HIV -ve groups ( $1727 \pm 291.2$  vs  $1305 \pm 306.7$ ;  $p = 0.13$ ) - regardless of pregnancy type. Furthermore, we detected significant FS expression across all study groups ( $p < 0.05$ ). In conclusion, this study demonstrates a downregulation of FS expression in PE, possibly due to oxidative stress and its immunoregulatory role in the hyperinflammatory milieu of PE. Moreover, the fact that FS did not vary by HIV status may be attributed to the effects of HAART regimen adopted in SA. It is also plausible to assume that the upregulation of FS expression (albeit non-significant) in HIV +ve patients, arises as a result of the immune response in controlling viral infection. Our novel findings suggest that FS may have a potential predictor test value early in pregnancy, hence work on this is ongoing.

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