

## A cross-sectional study assessing the prevalence of HIV-associated cytopaenias at Chris Hani Baragwanath academic hospital in South Africa

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**Introduction:** HIV is highly prevalent in South Africa, and is responsible for much burden of disease. It is well established that hematological complications are common in HIV positive individuals, and this study sought to identify the prevalence and associations of various cytopaenias in HIV-positive hospitalized patients.

**Methods:** The records of all adult patients admitted to medical wards at Chris Hani Baragwanath Academic Hospital (CHBAH) in South Africa over an eight-day period were retrospectively considered. The results of patients meeting the necessary criteria were anonymously collected and captured into an electronic database for analysis.

**Results and Discussion:** 677 patients were included in the study, 200 (29.5%) of which were HIV-positive (61.5% female). The majority of patients were in the 30 – 39 years age group (median age of 37 years). 73.5% of HIV-positive patients had a cytopaenia in at least one cell line, with the vast majority being anaemia (68.3% of all HIV-positive patients). 13.6% of patients were leukopaenic, 25.3% were neutropaenic, and 52.9% were lymphopaenic. Thrombocytopaenia was present in 20.1% of HIV-positive individuals. The most common co-morbidities were LRTI (21%), meningitis (20%), and tuberculosis (15%). 90% of patients with tuberculosis had anaemia, the most common cytopaenia in all co-morbid conditions. It was found that white cell count and hemoglobin were significantly lower in patients with a CD4 count <350cells/mm<sup>3</sup>, versus those with counts above this figure (p<0.05 and p<0.001, respectively), although this was not true of thrombocytosis (p>0.7). 81.7% of patients had a CD4 count below 350 cells/mm<sup>3</sup>.

**Conclusion:** Anaemia is the most prevalent hematological disturbance in HIV-positive hospitalized individuals, followed by thrombocytopaenia, and leukopaenia. Co-morbid conditions impact on these abnormal findings, and CD4 count is significantly associated with decreased white cell counts and haemoglobin levels. Further study is recommended to eliminate extraneous variables and gain a more complete understanding of cytopaenias in HIV infection, including the potential for prospective, real-time analysis of changing trends of cytopaenias in HIV-positive hospitalized patients.

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