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Immunoglobulin sub-typing and quantification in direct antiglobulin test positive haemolysis in an HIV prevalent setting

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ABSTRACT

Introduction: Positive direct antiglobulin tests (DAT) are valuable in identifying the aetiology of autoimmune haemolysis and in guiding therapeutic intervention. However, in human immunodeficiency virus (HIV) positive individuals with background polyclonal gammopathy, a positive DAT in the absence of haemolysis is common. In this setting, immunoglobulin G (IgG) quantification and subtyping may be of value, as this is possible with the recently introduced gel cards. There is paucity of literature evaluating the diagnostic usefulness of IgG subtyping and quantification in HIV positive individuals who are investigated for autoimmune haemolytic anaemia (AIHA). This study evaluated the usefulness of IgG quantification and subtyping in the diagnostic workup of AIHA in patients with a positive DAT, with and without HIV infection.

Methods: This retrospective, cross sectional study included patients investigated for AIHA in a quaternary care hospital. Those with a positive DAT had their IgG subtyped and quantified using the ID – Card DAT IgG1/IgG3 and IgG-dilution cards (Bio-Rad©, Cressier, Switzerland).

Results: Ninety patients admitted from December 2019 to March 2020 were investigated for AIHA. Forty-four (49%) patients had a positive DAT of whom 26 (59%) had evidence of haemolysis, and 16 (36%) were HIV positive. Concurrent HIV and haemolysis were present in eight patients, two of whom had IgG1 although none had an IgG antibody titre >1:30. None of the HIV positive patients without features of haemolysis had IgG1/IgG3 or IgG antibody titres >1:30.

Conclusion: In our clinical setting, IgG quantification and subtyping were found to be of limited value in the diagnostic characterization of AIHA in HIV positive patients with false positive DAT.