Assessment of fetomaternal hemorrhage among rhesus D negative pregnant mothers using Kleihauer-Betke test and flow cytometry in Addis Ababa, Ethiopia

Fekadu Urgessa
Haramaya University, Ethiopia

**Background:** This study aimed to assess fetomaternal hemorrhage (FMH) among RhD negative pregnant mothers using two techniques, Kleihauer-Betke (KBT) and Flow cytometry (FCM). To determine if patient-specific doses of prophylactic anti-D warrant further investigation in Ethiopia and wider Africa.

**Methodology:** Hospital based cross-sectional study was conducted among 75 RhD negative pregnant mothers using convenient sampling technique.

**Result:** FMH has been detected in 52% and 60% by KBT and FCM techniques respectively. The volume of FMH quantified in the majority of the cases (92.5% and 87%) was <10 mL fetal blood while >30mL in 1.3% (1/75) and 2.7% (2/75) as calculated by KBT and FCM respectively. The FMH calculated by the two methods have good correlation; r=0.828 (p=0.000) for categorized and r=0.897 (p=0.000) for continuous values and the agreement between the FCM and KBT was moderate with kappa (κ) value of 0.53 (p=0.000).

**Conclusion:** Most of FMH calculated (<10 mL) could have been neutralized by lower doses which might have lower costs than administering 300 µg dose which is currently in practice in our country for affording mothers. Besides, it also showed that the volume of FMH was >30 mL in 1.3% and 2.7% of the cases as calculated by KBT and FCM respectively which need more than 300 µg dose RhIG for neutralization. Further investigation into the cost-effectiveness and scalability of patient-specific dosing of prophylactic anti-D appears warranted.

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