Platelet Estimation: Semi-Quantitative Method Using the Miller Disc, Year II

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The research conducted focused on developing a method to perform a semi-quantitative platelet count on abnormal blood smears (Hemaglobinopathy, or sickle cell anemia, and Elevated Mean Platelet Volume) using a Miller Disc inserted in the ocular of a microscope. By using the oil immersion objective on the microscope, the researchers located an appropriate area on pre-prepared blood smears to count platelets. Initially, the researchers and a clinical lab scientist counted normal platelet sizes and levels against the Beckman DXH, the automated cell counter used at Orlando Regional Medical Center, as a control. The statistics conducted on the control group proved that the Miller Disc can be used as a reliable platelet estimation method. This year, the researchers and a clinical lab scientist compared sickle cell anemia counts and elevated Mean Platelet Volume counts to the Beckman DXH. This project is valuable because the Beckman cannot count abnormally sized platelets due to their improper genetic makeup/size, but this manual procedure can. The data collection determines whether or not the Miller Disc was a reliable way to count platelets of abnormal blood smears. This method should expedite the process of verifying platelet counts, which would benefit a patient's clinical care in a cost-effective and quick way. Physicians who treat patients with disorders in oncology, blood clotting, and high or low platelet counts depend on accurate counts to receive further treatment. By using a linear regression t-test for slope, a moderate-strong positive correlation between Beckman and the researchers was proven. This suggested that there was no significant clinical difference between the researchers and Beckman.