

COMPARISON OF INFECTIOUS TRANSMISSION THROUGH BLOOD TRANSFUSION (IMLTD) TEST RESULTS USING THE ECLIA METHOD AND THE NAT METHOD IN DONOR BLOOD AT THE PMI BLOOD TRANSFUSION CENTER IN MALANG CITY

Ferda Avrelia Sukmawati*, Nia Lukita Ariani, Ni Luh Putu Eka Sudiwati
D3 Blood Bank Technology Study Program, Ministry of Health Polytechnic
Malang, Jl. Besar Ijen No.77C, Oro-oro Dowo, Kec. Klojen, Malang City, East
Java 65119

Email: p17620231034ferda@poltekkes-malang.ac.id

ABSTRACT

Background: Blood transfusion has risk of transfusion-transmitted infections (TTIs) especially HIV/AIDS, hepatitis B, hepatitis C, and syphilis. Immunoassay methods require more time to detect the presence of antigens and antibodies due to the window period, so the NAT method is used to detect viral DNA/RNA during the window period. **Research Objective:** This study aims to compare the results of TTI screening using the ECLIA and NAT methods on donor blood at the PMI Blood Donation Center in Malang. **Method:** This study uses a descriptive analytical approach with a cross-sectional design. The sampling technique used simple random sampling with a total sample of 93 donor blood samples that underwent TTI screening using the ECLIA and NAT methods during the period January–August 2025. Data collection was conducted secondarily through documentation studies. **Results:** The results of this study showed that all (100%) IMLTD screening test results using the ECLIA and NAT methods were non-reactive. **Conclusion:** The study of 93 blood donor samples at the Malang City PMI Blood Transfusion Unit showed consistency between the ECLIA and NAT methods. The use of the NAT method as a complement to ECLIA ensures blood safety from the window period risk.

Keywords: ECLIA, NAT, Transfusion-transmitted infection, Window period