

Visabella Rizky Triatmono^{1,3}, Fathurohman Ramadhan Hanif Bari Wahyudi^{1,3}, Paul Monagle^{1,2}

¹Department of Paediatrics, The University of Melbourne. ²Department of Hematology, Royal Children Hospital. ³Faculty of Medicine, Universitas Indonesia, Indonesia.

Background

- Complete Blood Count (CBC) is a diagnostic tool to assess blood cellular components, such as red blood cells (RBCs), white blood cells (WBCs), and platelets.^{1,2,3}
- Reference Intervals (RIs) are ranges obtained from well-defined population to interpret individual's test result.⁴
- Although important, Issues on establishment of neonatal CBC RIs includes ethical constraints for enrolling reference individuals, various sites of collection, different volume, usage of data mining of CBC results and other differences in methodology.

Objective

Evaluate the **validity** and **clinical usefulness** of reported neonatal CBC RIs while comparing these RIs across different sites of collection.



Scan me for
reference list!



Methodology

Protocol

- Conducted according to PRISMA Guidelines⁵

Literature Search

- Studies published from January 2006–14 February 2021.
- ("Infant*" OR "Newborn*" OR "Neonate*") AND ("Full blood count" OR "Full blood examination" OR "Complete Blood Count") AND ("Reference*" OR "Normal*").

Inclusion Criteria

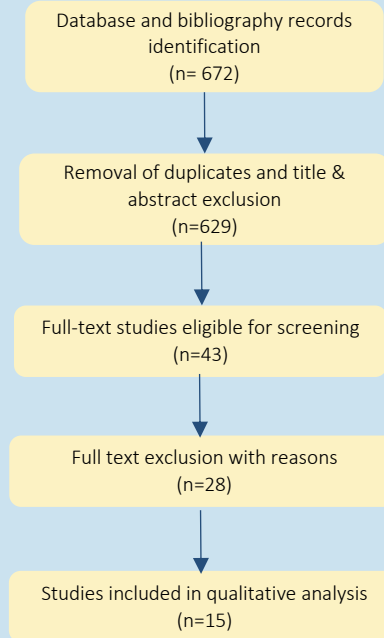
- Healthy term infants (>36 weeks of gestation)
- Infants from birth to 28 days of life
- Blood obtained from venous, capillary, or umbilical cord blood
- Observational studies.

Quality Assessment

- NHLBI quality assessment tool for observational and cross-sectional study

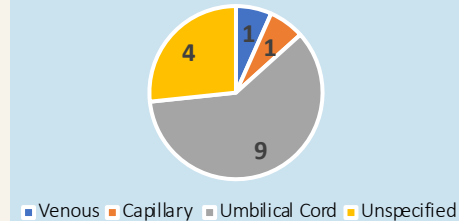
Conclusion

- Reported neonatal CBC RIs possess variable key aspects and some studies failed to articulate these important information.
- Clinicians should consider the variations to utilize suitable neonatal CBC RIs in their clinical settings.
- Future studies should define the neonatal CBC RIs for Indonesian population.

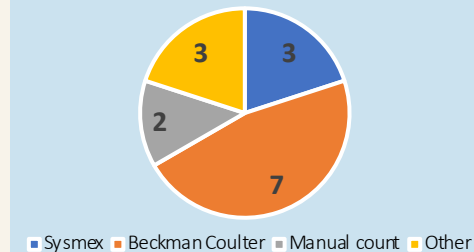


Results⁶⁻²⁰

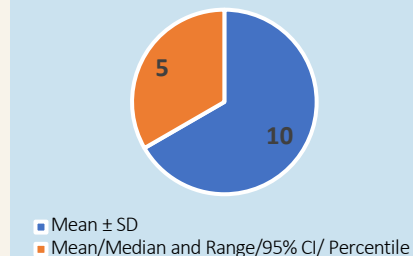
Sites of Blood Collection (n=15)



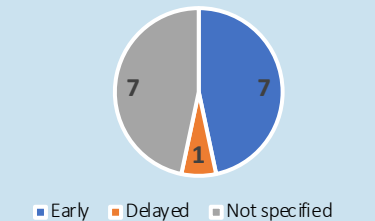
Haematological Analyzer (n=15)



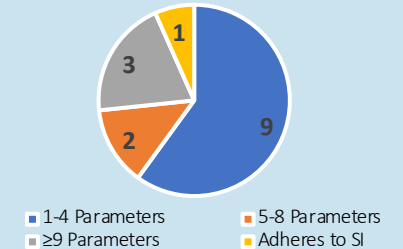
Reported Descriptive Data (n=15)



Time to Umbilical Cord Clamping (n=15)



Differences in Reported Unit of Measurement compared to SI (n=15)



Discussion²¹⁻²³

- Number of studies eligible for review is limited, only 15.
- Comparison of neonatal CBC parameters could not be made comprehensively.
- Other factors that affect the variability of these RIs, includes ethnicity, population demographics, method of data collection

