The comparison of erythrocyte sedimentation rate (ESR) modify Westergren Caretium Xc-A30 and Westergren Manual in Clinical Pathology Laboratory, Sanglah General Hospital, Denpasar, Bali

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Original Article

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Journal Information

Aims and Scope

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About Sanglah General Hospital

Sanglah General Hospital was built in 1956 and inaugurated on December 30, 1959, with a capacity of 150 beds. In 1962 in collaboration with the Faculty of Udayana University as a teaching hospital. In 1978 became a teaching hospital as type B and Kebatal Hospital for Bali, NTB, NT, East Timor. As with other organizations, Sanglah Hospital also has a vision as to the intended direction, become eminent in the field of Hospital Care, Education, and Research of the National and International level. In realizing this vision in providing services Sanglah always strive with every effort to maintain excellence to satisfy the people who
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ABSTRACT

Background: The erythrocyte sedimentation rate (ESR) test is one of the most widely performed laboratory test to assess acute phase of inflammation, infection, autoimmune or malignancy. The reference method for ESR measurement was introduced by Westergren. This method is sensitive, easy, inexpensive and time-consuming. Automatic instrument has been introduced to decrease the measurement time. Caretium Xc-A30 is automatic instrument to measure ESR. It is used in Sanglah General Hospital Denpasar without previous research. Aim of this study was to assess comparison, correlation and agreement of Caretium Xc-A30 to reference method.

Methods: A total of 35 samples in consecutive sampling were taken during August 2018 at Sanglah General Hospital, Denpasar. The sample were examined for ESR with Caretium Xc-A30 and manual Westergren. Comparison, correlation and agreement were tested for both methods used.

Results: The Westergren method was the reference method and Caretium Xc-A30 was the tested method. Wilcoxon signed rank test showed no difference between two methods (p = 0.499). There was a very strong correlation and excellent agreement showed by Spearman coefficient correlation r = 0.887 and kappa coefficient 0.941. Conclusion: This study showed no difference between Caretium Xc-A30 and Westergren as the reference method for ESR measurement, with very strong correlation and excellent agreement. Thus, Caretium Xc-A30 has a potential use in performing ESR measurement with high throughput and less time than manual Westergren method.

Keywords: Caretium Xc-A30, erythrocyte sedimentation rate, Westergren

INTRODUCTION

There have been many studies conducted to compare several automated tools in ESR measure-