

## **A RAPID METHOD FOR ERYTHROCYTE SEDIMENTATION RATE**

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The erythrocyte sedimentation rate (ESR) is one of the most common and traditional laboratory tests in the world for detecting acute and chronic inflammation. This simple test has served as a nonspecific indicator of presence of disease. It also has been found useful in monitoring of response to therapy, especially in rheumatologic disease. It reflects both plasma concentration of acute-phase proteins of large molecular size and anaemia. The ESR test method is easy to perform and inexpensive and is used today as a routine test worldwide. However, the ESR has some demerits, in requiring large volume of sodium citrate or EDTA blood and at least 1 hr testing time. The minimum of 1 hr testing time is not practical for modernized laboratories. In this paper, we investigated the possibility of using a rapid ESR done on inclined tube. We compared the results obtained by the rapid method and the traditional Westergren method of ESR using Pearson correlation.

Blood samples belonging to 153 patients with ESRs ranging from 1-165 were used for the study. Four ml of sodium citrate blood (3.2 ml of blood & 0.8ml of 3.8% of sodium citrate) is prepared and two Westergren type tubes filled. Both tubes are mounted on two separate Westergren tube racks. After mounting, one ESR tube is tilted at an angle of 45 degrees from vertical and readings were taken at 4, 4.5, 5, 5.5, 6, 6.5, 7, 7.5, 8, 8.5, 9, 9.5, 10, 10.5, 11.0, 11.5, 12, 12.5, 13 minutes by considering the lowest point of the meniscus. The reading of the tube that is kept vertical is taken after 60 minutes. The statistical analysis showed that the values of the modified method between 10.5 to 11.5 minutes showed a very good correlation with the values of the standard method. The correlation is good for low ESR values as well as for extremely high values.

The rapid ESR method has the advantage of being able to get a quicker result. The accuracy of the results is acceptable. Same laboratory equipment can be used for the new method. This technique would be suitable for rheumatology clinics where this test is requested frequently to modify the treatment.