
Students' Corner

Letter to the Editor

Erythrocyte sedimentation rate: Diagnostic value and pitfalls of usage in clinical practice

Madam, the erythrocyte sedimentation rate (ESR), first described by Edmund Biernacki, was considered an exciting addition to the diagnostic armamentarium of the physician and an important aid in the assessment of occult, obscure and elusive presentation of diseases. It gained further popularity when Alf Westergren modified the technique of measurement.¹

However, interpreting the ESR without the backdrop of a proper clinical context can lead to erroneous presumptions. It should be noted that the ESR is affected by a multitude of factors other than illness. Increasing age, female gender, technique of performing the test, pregnancy, anaemia and possibly even obesity may cause an elevation. Conversely, hypofibrinogenaemia, hypergammaglobulinaemia associated with dysproteinaemia, and hyperviscosity may each cause a marked decrease in the ESR.¹

Evidence of South Asian ancestry on ESR has not been investigated in literature. Caradoc-Davies et al studied ESR variation in a racially mixed population in New Zealand; revealing significantly elevated results in certain subsets. This was theorized to be elevated due to higher rate of infection in these groups.² Ultimately, it is the unique genetic makeup of each subset of population and each individual that modulates the body's differential response to infection and illness; this variation may warrant use of different population specific cutoffs. ESR values need to be studied in our population in the context of the high prevalence of dyslipidaemia.^{3,4}

Despite the swift technological advancement in all areas of diagnostic medicine, ESR retains some of its importance in identifying a few disease states which present with very high elevation or in the monitoring of the progress of some diseases. However, despite a lack of definitive clinical utility, ESR is still a frequently ordered test in clinics. Possible reasons that come to mind when interpreting this "prescriber's behaviour" include

the inexpensive nature of ESR and the lack of awareness amongst physicians about its lack of specificity as well as the lack of awareness of the battery of factors that must be kept in mind while interpreting this test. An elevated ESR has poor discriminating power as a single isolated test (i.e., sensitivity and specificity not exceeding 50%) to predict bacterial infection with nonspecific, febrile illnesses of short duration.⁵

An elevated ESR is used as a key diagnostic criterion for only 2 disease entities: polymyalgia rheumatica and temporal arteritis. However, normal values do not preclude the presence of these conditions. A highly elevated ESR (>100 mm/hr) has a low false positive rate for serious underlying disease.¹ It will usually have an underlying cause - most commonly infection, malignancy or temporal arteritis and should warrant a thorough investigation. However, a mild to moderately elevated ESR without obvious symptomatology may be followed "conservatively" by repeat testing after several months rather than an expensive search for occult disease.¹

At the end of the day, ESR should generally not be employed as the sole rationale for determining treatment and prescribing behaviours among physicians.

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References

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