

## Aberration of Erythrocyte Sedimentation Rate by Zinc Nanoparticles

Sora Yasri<sup>1\*</sup>, Viroj Wiwanitkit<sup>2</sup>

1. *KMT Primary Care Center, Bangkok, Thailand*
2. *Adjunct professor, Joseph Ayobabalola University, Nigeria*

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**Corresponding information:** Sora Yasri, KMT Primary Care Center, Bangkok, Thailand. E-mail: sorayasri@outlook.co.th

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Dear Editor, erythrocyte sedimentation rate (ESR) is a useful basic clinical pathology laboratory investigation. It can be helpful in diagnosis and follow-up of several diseases. At present, a new automated method with proven reliability is available for ESR test (1). Here, the authors report on observation on a laboratory experiment to test the effect of zinc nanoparticles on ESR results. The total of 100 blood samples was used in the experiment. Each sample was divided into two parts. One part was directly measured for ESR and the other part was added by 1 droplet of zinc nanoparticles solution then exposed to ESR measurement. All ESR measurements were done using the same automated ESR analyzer; MicroSed SR-system, in the same ISO15189 accredited clinical laboratory

at the same time, place and condition. The ESR results showed a difference in ESR values between two groups. The ESR values for the groups with and without zinc nanoparticles were equal to  $25.6 \pm 7.2$  and  $10.7 \pm 3.4$  mm/hr, respectively. Therefore, zinc nanoparticles can interrupt the ESR test conducted by automated analyzer. This observation was similar to the recent report which showed nanoparticles can alter the result of lipid profile test (2). Therefore, due to the widely use of nanoparticle substances, practitioners must consider the effect of nanoparticles interference in the interpretation of ESR results.

### Conflict of interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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