

Neutropenia

To the Editor

We read the article, Neutropenia, by Al-Ankoodi and Rawther¹ with great interest and we would like to make a few comments about it. The study investigated neutrophil counts in normal Omani individuals and found the range differed markedly from that of the International range.¹ We believe that their findings are very important, since they emphasize the need for establishing normal neutrophil count ranges, not only for the Omani population, but also for the regional population. In addition, such results emphasize the need to conduct investigation into the normal ranges of all other blood indices.

Hematological, immunological and biochemical indices are important in the evaluation of health and disease. Since the normal ranges of these indices vary from one race to another, as the above and previous studies have shown, establishment of normal ranges for all laboratories parameters for the regional population would be essential for the proper evaluation of the health status of the regional population. Relying on international ranges could result in a lot of confusion on the health status of a proportion of the population, leading to unnecessary investigations and a lot of stress to patients.

In our recent paper, we have suggested that regional research should be linked to community needs and suggested that establishment of normal and pathological indices for the regional population as an area for investigation.² This suggestion would be supported by the study of Al-Ankoodi and Rawther.¹ Normal hematological ranges for the African population have been established previously.³ This was prompted by earlier small studies showing that normal ranges for Africans varied considerably from that of the Western population.^{4,6} Therefore the study of Al-Ankoodi and Rawther¹ should lead to large scale studies in order to evaluate the normal ranges of the different hematological, immunological and biochemical indices for the regional population. Since large scale studies would need to be carried out and which would need a lot of effort and resources, it may be necessary for each country to carry out such studies in one or more specialized centres. Each study would need to involve a large number of individuals covering all the different age groups and be representative of the whole population. The Ugandan study involved over 3000 individuals

altogether.³ It may also be useful for the Arab Board for pathologists, or other relevant bodies, to organize a conference in order to discuss this topic, using the available preliminary data from the region as a source for discussion and planning of future large studies.

With regards to the Al-Ankoodi and Rawther study, we have the following observations: 1) The authors used blood from blood donors, since it is well documented that some anticoagulants and long term blood storage can lead to pseudo neutropenia; we wonder whether any of these factors contributed to the observed low neutrophil counts. 2) How precise are the results generated by the Cell-Dyn 3500R automated analyzer. 3) Were the samples with the extreme results in Figure-1 re-analyzed to check for re-reproducibility? 4) The authors quoted that low neutrophil counts are known to be associated with Arabs. How do their results compare with the results obtained previously? References of previous studies would have been useful to the reader. 5) The authors refer to the Omani ranges ($2-7.5 \times 10^9/L$) in Figure 2. How these previous ranges were obtained, and are there any reasons to explain why they are different from their study. 6) With regards to the individual with a neutrophil count of $0.5 \times 10^9/L$, were inflammatory and infection markers examined (such as erythrocyte sedimentation rate, C-reactive protein) and was a detailed clinical history elicited. 7) Finally, how were other hematological indices (red blood cell, hemoglobin, mean corpuscular volume, hematocrit, platelets, lymphocytes and so forth) compared with the international reference ranges?

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Reply from the Author

I think this article highlights the great need for revising the laboratory ranges.

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