Title: Prevalence of diphtheria toxoid IgG antibodies in children, adolescents and adults in Poland

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Reviewer: L.G. Milagres

Reviewer's report:

Prevalence of diphtheria toxoid IgG antibodies in children, adolescents and adults in Poland.

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Diphtheria is a life-threatening disease that can be prevented by immunization. Despite the dramatic decline in the incidence of diphtheria after routine childhood immunization several studies have shown that the adult population is not fully protected against the disease.

The present study showed that the overall proportion of susceptible persons to diphtheria was 39.4%. It means that a significant high frequency of individuals is not protected by vaccination. Protection against diphtheria is associated with the development of toxin neutralizing antibodies. Did the authors compare the ELISA test with neutralization test in Vero cells? Data related to sensitivity and specificity of the ELISA should be added to the manuscript.

As stated by the authors diphtheria vaccination history of the tested individuals was not available. Do the authors know the vaccination coverage in children and teenagers? How can the authors certify that the low level of diphtheria antibodies detected is not associated with low vaccination rate?

The toxoid concentration may also influence the immunogenicity of the vaccine. In a recent outbreak of diphtheria among military trainees, the risk of disease was lower and diphtheria antitoxin levels were higher among trainees who received their last booster dose with higher-antigen DT instead of lower-antigen dT (Oluabunwo C, et al. Scand J Infect Dis 2005; 37: 813-820). Which was the dose of diphtheria toxoid used in the vaccine?

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests:

No competing interests