

## Discussion

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# Methodological commentary on the analysis of metrifonate and dichlorvos in biological samples

## Reply to Aden Abdi *et al.*

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We thank Dr. Yakoub Aden Abdi *et al.* [1] for their comments on our paper [2] and wish to reply as follows.

The plasma concentration of metrifonate observed by Aden Abdi *et al.* [3] when blood samples were not acidified soon after blood collection agrees with the metrifonate levels observed by our laboratory [2,4,5] as well as by Nordgren [6] when the same dose was administered.

Aden Abdi *et al.* [1] reported a consistent whole blood 2,2-dichlorovinyl dimethyl phosphate (DDVP) concentration of 1% of the metrifonate level when blood was collected in tubes containing acid. Nordgren [6] reported a consistent DDVP concentration of 1% of the metrifonate level in both plasma and erythrocytes without acidifying blood samples during collection. We observed mean peak plasma DDVP levels of 2.8% ( $n = 4$ ) and 7.5% ( $n = 3$ ) of the metrifonate concentration in two different stud-

ies when blood was collected in tubes not containing acid [4,5]. The increase in DDVP concentration observed by us could be due to the differences in metabolic rates between young adults and older individuals.

Aden Abdi *et al.* [1] reported that in the absence of acid the concentration of metrifonate decreases by 20% whereas that of DDVP increases fifteen-fold during plasma preparation. Unfortunately the authors did not mention the experimental conditions (buffer pH, plasma and buffer temperature) which play an important role in the stability of metrifonate and DDVP [2].

Stability of drugs in tissues is an important issue during sample preparation for drug level determination. Before any conclusion can be drawn as to the importance of acid in tubes for collection of blood containing metrifonate or DDVP it will be necessary to conduct parallel studies by (a) adding metrifonate and DDVP to blood collected in tubes with and without acid, (b) adding metrifonate and DDVP to plasma collected in tubes with and without acid and (c) collecting blood from humans exposed to metrifonate in

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tubes with and without acid. Aden Abdi and co-workers [1,3] did not report analysis of data collected in such a systematic way.

#### REFERENCES

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