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Dr R E Davies
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Victoria 3001
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Your ref

Our ref

Date

KF:EKW

20 Jun 74

PARAQUAT POISONING

Dear Dr Davies

I think I would probably agree that the diluted solid formulations of paraquat are less toxic than the concentrated liquids. It is very difficult to be definite about this since accurate measures of dose are not available. Our experience is that usually over one packet of Weedol is required (the old 5%), although people have committed suicide with less and one case in a girl of 20 was allegedly 20 gm. I have a suspicion, shared by some physicians but unconfirmed, that paraquat is less toxic to younger people; the remarkable recoveries in the literature seem to be in the young - not old, but this may be rather random. There are several reasons why the concentrate may be more toxic, (a) it is irritant and corrosive to the gut and this may aid absorption, (b) Weedol taken as a solid may not dissolve in the part of the gut where absorption is most efficient, (c) $MgSO_4$ may assist elimination from the gut.

The suggestion of putting an emetic in Gramoxone has been looked at and the drawback is mainly one of cost and compatibility. I estimate a fatal dose as 10 ml of the 20% formulation and, therefore, the emetic dose must be contained in this or a lesser volume. Can you estimate the cost of putting 500 emetic doses of ipecacuanha in each gallon of Gramoxone? If you try to use a metal, such as copper or antimony, the required strength is about 10% and is both too costly and incompatible with the paraquat. One requires an immediate emetic effect and this rather rules out the centrally acting compounds such as apomorphine, even if these should be required in small doses and the cost could be kept down.

I enclose a copy of my review just in case this might furnish a few useful references and you haven't yet seen it.

Yours sincerely

pp. K. Fletcher.
Kw.

K Fletcher

Enclosure