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3 - SEP 1980

Your ref

Our ref  
TBH/CVM

Tel ext

Resacted - US PPI

Date

1 SEP 80

PARAQUAT POISONINGS - UK

A Poisons Information Officer, Miss Amanda Bramley, financed by ICI PPD and based at Guy's Poisons Unit, took up appointment on June 1 this year. The remit was to follow up poisoning cases attributable to ingestion of paraquat formulations within the UK.

However Miss Bramley has been involved with this type of work for approximately 10 months prior to her appointment. Below is a breakdown of poisoning cases for the period January 1 to July 18 inclusive.

<u>Total number of informed poisoning cases</u>			-	73
"	"	" fatalities	-	11
"	"	" survivors	-	41
		unknown	-	21

Of the fatalities, all except one were attributable to ingestion of 'Gramoxone'. The remaining fatality was an old man, who had ingested 'Weedol' (1 sachet), but died from renal failure and bronchopneumonia. I suspect that paraquat was not the main cause of death in this case. Overall this figure of 10-11 fatalities is very low compared with the figures for the same period of time last year, but is consistent with the recent downward trend of fatalities since 1977.

The total number of incidents is unremarkable compared with previous years and there is an apparent improved ratio of survivors to fatalities. I suspect the reason for this is due to improved follow-up rather than any reduction in toxicity of paraquat formulations.

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EMETICISED CASES

In by far the majority of cases confirmation of the presence or absence of emetic in the formulation was not possible. This is a reflection on the difficulty of such a procedure and represents the major problem in the follow-up.

Of the cases from Jan 1 to July 18 (incl) 1980, 11 cases were shown to involve emeticised paraquat, 4 cases were shown to involve non-emeticised paraquat. 9 out of 11 emetic cases survived, but 8 would probably have done so in any case, emetic or no emetic.

Recently we have heard of a case, in which a man took 70 mls of 'Dextrone' X, vomited within 5-10 minutes of ingestion and continued to vomit repeatedly for the next few hours. He was admitted to hospital within 3 hours of ingestion, given standard treatment and survived. This case, not included in the 11 cases above, is probably the most encouraging one to date on the efficacy of PP796 in paraquat formulations in reducing mortality.

The present position regarding cases where the presence of emetic could have contributed to survival, can be summarised as follows:

Patient	Approximate Amount Ingested	Vomiting	Treatment	Country
1. Redacted - EU PII	30 mls	Early repeated	F.E	U.K
2. Redacted - EU PII	40 mls	Did not vomit	FE/HD/HP	U.K
3. Redacted - EU PII	Mouthful	Early repeated	F.E	Japan
4. Redacted - EU PII	70 mls	Early repeated	FE/HD	U.K

F.E - Fullers Earth  
H.P - Haemoperfusion  
H.D - Haemodialysis

The second case, Redacted - EU PII, does raise a problem in that no vomiting occurred, but the physician concerned was satisfied an approximately lethal dose of paraquat was ingested. It could be argued that delay in gastric emptying followed by prompt treatment was responsible for the patient's survival.

These recent cases do seem to indicate that the presence of emetic in paraquat formulations will benefit only a certain group of poisoning cases, it would be unlikely to affect the outcome of cases where large amounts of paraquat are ingested, e.g 100 mls or so of 20% solution.

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Reduced - EU PM  
There is a possibility that case number 4 - M.B - may be published in a Medical Journal by the physician concerned, Dr Ackrill (Manchester Royal Infirmary). TBH will keep PPD informed of any further developments.

#### ANALYSES OF POISONING INCIDENTS

##### 1. According To Intent

- Suicide - 45  
- Accidental - 21  
- Unknown - 7

All fatalities involved suicide, no accidental deaths occurred. These figures are unremarkable compared with previous years, but do underline heavily that the problem in the UK is mainly one of suicides.

##### 2. According To Product Ingested

- Liquid Formulations - 20  
- Solid Formulations - 42 - 'Pathclear' - 4  
  'Weedol' - 38  
- Unknown - 11

Previous estimates on ratio of solid:liquid formulations involved in paraquat poisonings were in the region of 1:1. These figures give a ratio of about 2:1, which is much more in accordance with what would be expected in view of the increased availability of solid formulations over liquid formulations to the general public.

#### CONCLUSIONS

1. The present data would suggest that the number of fatal paraquat poisonings for 1980 will be lower than that in 1979, consistent with the recent trend.
2. Active follow-up has provided better data, but improvements are necessary to determine the presence/absence of emetic in the formulation involved.
3. Not enough evidence is available as yet to determine the efficacy of emetic in reducing mortality following ingestion of paraquat. The individuals ingested 2-3 x the potentially lethal dose of paraquat.

*Bernard Hart*

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