

Profile of Drug Overdose Cases Referred to the National Poison Centre of Malaysia during 2007



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The 8th Asian Conference on Clinical Pharmacy (ACCP 8), 1-4 July 2008, Surabaya, Indonesia

INTRODUCTION

- National Poison Centre (NPC) of Malaysia is a 24-hour call centre for drug and poison information.
- NPC is not a reporting centre for poisoning.
- National data captured from government hospital admission system in 1999 to 2001, revealed that drug overdose cases outnumbered cases by other chemical substances. (Reena et al, 2004).
- Most poisoning enquires to NPC involved chemical poisoning with pesticides at the top of the list.
- Drugs overdose cases referred have never been studied since previous version of the Poisoning Case Report form do not capture subclass of pharmaceutical products.

OBJECTIVES

- To study the profile of drug overdose cases referred to the NPC during one year period (2007).
- To compare the findings with national data of 1999-2001 to see the possible differences or trends of drug overdose cases.

METHODOLOGY

- The study utilized the new version of the Poisoning Case Report forms that capture specific classification of pharmaceutical products.
- Data from the forms were entered and analysed using SPSS 15.0
- Enquiries of general drug information and cases involving drugs of abuse were excluded.

RESULTS

* Total poisoning enquiries referred to NPC in 2007 = 1900 cases

* Table 1: Type of poisoning by agent:

| Agent | Frequency | Percentage |
|-----------------|-----------|------------|
| Drugs | 611 | 32.2 |
| Other chemicals | 1238 | 65.2 |
| Natural toxins | 51 | 2.7 |

RESULTS

Demographic characteristics of poisoning cases referred to NPC in 2007

* Table 2: Poisoning cases by age group

| Age Group | Frequency | Valid % |
|--------------------|-----------|---------|
| 0-4 weeks | 1 | 0.1 |
| 4 weeks -12 months | 43 | 2.4 |
| 1-4 years old | 315 | 17.3 |
| 5-14 years old | 132 | 7.3 |
| 15-19 years old | 203 | 11.2 |
| 20-74 years old | 1110 | 61.1 |
| ≥ 75 years old | 12 | 0.7 |
| Unrecorded/Unknown | 84 | |
| Total | 1900 | 100 |

RESULTS

* Table 3: Poisoning cases by gender

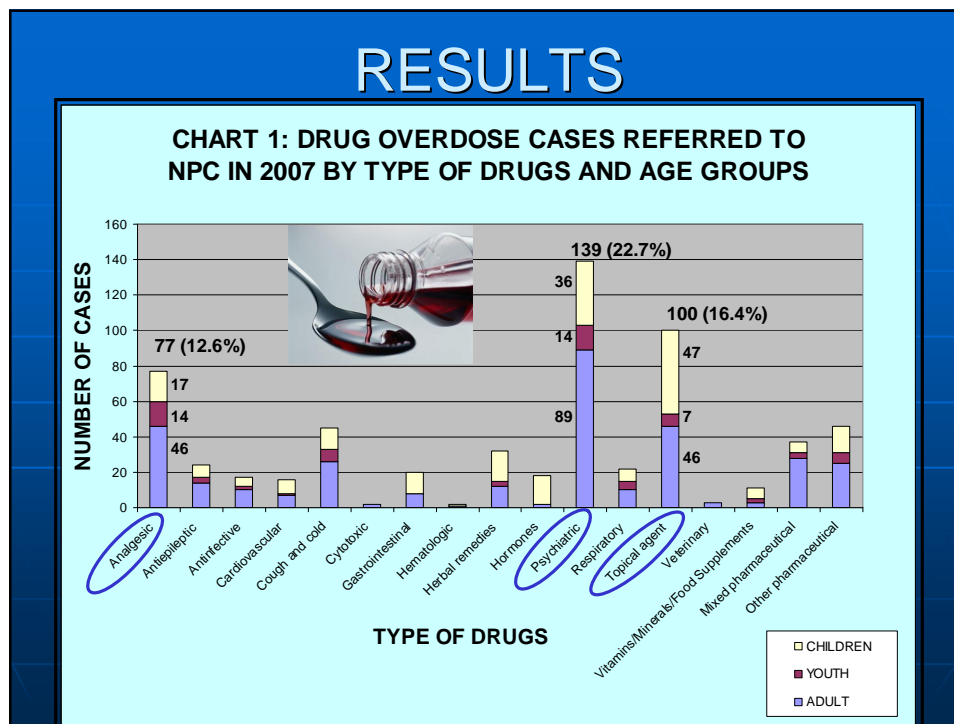
| Gender | Frequency | Valid % |
|--------------------|-----------|---------|
| Male | 904 | 48.6 |
| Female | 684 | 36.8 |
| Unrecorded/Unknown | 312 | |
| Total | 1900 | 100 |

* Table 4: Poisoning cases by type of incidents

| Type of incidents | Frequency | Valid % |
|--------------------|-----------|---------|
| Intentional | 1056 | 56.4 |
| Unintentional | 810 | 43.2 |
| Adverse reactions | 8 | 0.4 |
| Unrecorded/Unknown | 26 | |
| Total | 1900 | 100 |

RESULTS (Chart 1)

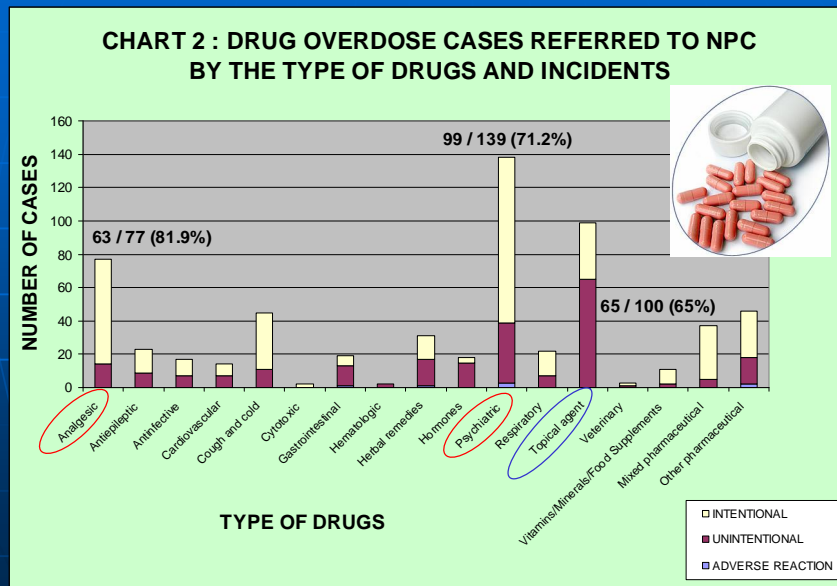
- In this study pharmaceutical agents were classified into 17 groups. Of these groups psychiatric drugs cases referred were the highest (22.7%) followed by topical agents (16.4%) and analgesics (12.6%).
- Paracetamol were obviously found to be the highest cases in the analgesics group.
- The majority of the psychiatric drug poisoning involved adults of 20 years old and above (64%)
- Children were frequently implicated in topical agent poisoning (47%).
- Youths were found to be involved more with analgesic and psychiatric drugs (18.2%).



RESULTS (Chart 2)

- Chart 2 clearly showed that most of the drug overdose cases referred to NPC are intentional with suicidal as the main reason.
- 71.2% of psychiatric drugs overdose and 81.9% of analgesics drugs were intentional cases.
- While topical agents were higher with unintentional cases (65%)

RESULTS



RESULTS (Table 5)

- Studying the children age groups, toddlers aged 1-4 years old were found to be frequently exposed to drug overdose with 142 cases and they were implicated more with topical agents (17.6%) and psychiatric drugs (17.6%).
- Cases referred to NPC involving children of 4 weeks to 12 months showing higher rate of herbal remedy exposures (31.6%).

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Table 5: Number of drug overdose cases involving children

| Type of drugs | Number of cases by categories of Age | | |
|------------------------------------|--------------------------------------|------------------|-----------------|
| | 4 weeks - 12 months | 1-4 yrs | 5-14 yrs |
| Analgesic | 1 (5.3) | 12 (8.5) | 4 (7.8) |
| Antiepileptic | 0 | 3 (2.1) | 4 (7.8) |
| Antinfective | 0 | 3 (2.1) | 2 (3.9) |
| Cardiovascular | 1 (5.3) | 6 (4.2) | 1 (2.0) |
| Cough and cold | 1 (5.3) | 9 (6.3) | 2 (3.9) |
| Cytotoxic | 0 | 0 | 0 |
| Gastrointestinal | 1 (5.3) | 8 (5.6) | 3 (5.9) |
| Hematologic | 0 | 1 (0.7) | 0 |
| Herbal remedies | 6 (31.6) | 9 (6.3) | 2 (3.9) |
| Hormones | 0 | 16 (11.3) | 0 |
| Psychiatric | 2 (10.5) | 25 (17.6) | 9 (17.6) |
| Respiratory | 0 | 7 (4.9) | 0 |
| Topical agent | 5 (26.3) | 25 (17.6) | 17 (33.3) |
| Veterinary | 0 | 0 | 0 |
| Vitamins/Minerals/Food Supplements | 0 | 4 (2.8) | 2 (3.9) |
| Mixed pharmaceutical | 1 (5.3) | 3 (2.1) | 2 (3.9) |
| Other pharmaceutical | 1 (5.3) | 11 (7.7) | 3 (5.9) |
| TOTAL | 19 (100) | 142 (100) | 51 (100) |

Discussions

- 32.2% of poisoning enquiries referred to NPC in 2007 were drug overdose cases. But national data in 1999-2001 reported about 54.9% of hospital admissions (Reena et al, 2004). Possible reason is due to better knowledge of medical professionals on drugs rather than other chemicals, that they need to consult NPC more on other chemical poisonings.
- Drug overdose cases referred to NPC involved mainly psychiatric drugs, analgesics and topical agents. While national data reported 3 commonest groups which were:

 1. Nonopioid analgesics/antipyretics/antirheumatics (ICD 10=T39)
 2. Diuretics/unspecified drugs (ICD 10=T49)
 3. Topical agents (ICD 10=T50) (Reena et al, 2004)

Due to easy access of public to certain analgesics and topical agents in Malaysia, NPC and national data reported almost similar trend where paracetamol is the favourite agent in analgesics group.
- Most of the drug overdose cases referred to NPC are of intentional circumstances. However national hospital admissions data recorded higher incidence of unintentional accidental cases (Reena et al, 2004). One assumption that can be made is that medical professionals often call the NPC for complicated drug overdose cases that usually associated with intentional cases.
- NPC data and national data reported the same findings that toddlers aged 1-4 years old were found to be more frequently involved in poisonings.

Limitations

- This study describes the general trend of drug overdose cases referred to NPC and does not represent the actual rates.
- Missing information (unrecorded/unknown) was due to data collection that is done while answering poisoning enquiries.

Conclusions

- Drug overdose cases referred to NPC in 2007 were 32.2% of total poisoning cases referred.
- Of these drug overdose cases, psychiatric drugs overdose were the highest cases referred followed by topical agents and analgesics.
- Most of the drug overdose cases referred to NPC are of intentional circumstances.
- Toddlers aged 1-4 years old were found to be more frequently involved in poisoning with drugs.

Recommendation

- Although NPC findings are not representative of actual rates, it is still a good indicator of the general trend among those cases. Our findings are useful for planning future educational and preventive measures.
- Certain drugs like analgesics and topical agents that are frequently involved in poisoning, need to be given emphasis to the public on the usage and storage to prevent overdose, misuse and abuse. One common drug is paracetamol.
- Europe and Australia have introduced legislation that restrict the pack size as well as maximum numbers of paracetamol that can be sold.
- Studies in UK report this has significantly reduced both morbidity and mortality associated with paracetamol self-poisoning. (Hawton K et al. 2001)
- The economic burden of paracetamol poisoning in the local setting has never been studied and should be undertaken to evaluate the usefulness of implementing similar legislation that restrict the availability of paracetamol.

References

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