Poisoning trends in intensive care unit at secondary care hospital – a pilot study

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ABSTRACT

Poison is known as a toxic and hazardous substance that is capable of causing illness to the living organisms. It can lead to some fatal outcomes. Self-harming has become a global issue, which is a burden on society. Every year millions of people die due to the consumption of toxic compound and leaving their loved ones behind in grief. The prospective pilot study was performed on a small scale for a period of three months. Each type of poison case admitted to Intensive care unit for the three months from July 2018 to September 2018 were taken into consideration. The informed consent has been obtained from all the patients, whereas demographics details of the patient were obtained using a predesigned data collection form. During the study period, 37 cases of poisoning were reviewed. The incidence is found to be more in males 28 (75.6%) when compared to females 9 (24.3%). Our study results showed that pesticides are the major reason for poisoning with an intention of self-harming. Majority of the poisoning cases were seen in the age group of 21-30 where physical and mental stress is the major reason.

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INTRODUCTION

Poison is a harmful substance that causes harm to the body. Poisoning occurs when a toxin is swallowed (ingested), breathed in (inhaled), absorbed or injected into the skin, or gets into the eyes. (Oxford Dictionaries, 2019) WHO data in 2012 reveals 193,460 people died worldwide due to unintentional poisoning, which is accounting for about 84%, indicating that poisoning is a significant global public health problem. Of these deaths, 84% occurred in low- and middle-income countries. Nearly a million people die every year due to suicide, whereas chemicals account for a significant number of these deaths. It is estimated that deliberate ingestion of pesticides causes 370,000 deaths each year and at least one-in-seven suicides globally. (WHO, 2019) (Emma, 2017). Many times poisoning occurs in the home unintentionally as acute (i.e., develops suddenly), and involves children under the age of six. Most of the poisoning in children are due to some personal care products such as cosmetics and some over the counter or prescription medications such as cough and cold medicine and pain relievers. (Healthcommunities, 2019). The type of poison used varies in different parts of the world based on many factors like socioeconomic factors and cultural diversity. Several agents such as pesticides, drugs have been used for intentional and accidental poisoning in different countries. Agriculture is the major profession, progress in the industrial field and advances in the medical sciences led to the easy availability of various pesticides. (Ramesha et al., 2009). Hence pesticides have been used commonly for in-
tentional self-poisoning and self-harm. Secondary to the pesticides, drugs were found to be the most common agents in poisonings in India. Of those pesticides, organophosphates constitute the majority of poisoning cases. (Patil et al., 2014) . The pattern of poisoning in any area or a region depends on the availability of various types of poison, socioeconomic factors like low and middle income, illiteracy, occupation in that area, cultural and religious beliefs. (Jesslin, 2010) . Thus, the information on the pattern of poisoning will help to know the type and severity of poison in a particular region.

In Nigiri’s district of Tamil Nadu where agriculture is one of the major professions, many of the poisoning patients get admitted to the emergency department of Government Head Quarters Hospital, the study of this kind and this type serves as an important tool for the prevention and management of poisoning cases, with the reduction in number of deaths associated with the poisoning. With this background, the study aims to assess and evaluate the pattern of poisoning in the emergency department of a secondary care hospital in this region.

MATERIALS AND METHODS

The present study was a prospective study conducted over three months. All cases of poisoning admitted in intensive care unit from a period of July 2018 to September 2018 were reviewed. Informed consent has been obtained from all the patients. About 37 cases of various types of acute poisoning due to drugs and chemicals were included in the study. The data, including the demographic details of the patient like age, sex, IP no (Inpatient number), type of poison and treatment given, were obtained using a predesigned data collection form. The data was collected with the help of medical records. The diagnosis of the poisoning was done based on history, chief complaints, physical examination, and laboratory tests (if available). Cases of Food poisoning were excluded from the study. Other relevant information of patients on education, occupation, use of social media, area of residence, marital status, alcohol or smoking status were obtained via medical reconciliation. The analysis of the study was done using Microsoft Excel software.

RESULTS AND DISCUSSION

During the study period, 37 cases of poisoning were reviewed. The incidence is found to be more in males 28 (75.6%) when compared to females 9 (24.3%) with a ratio of 3: 1. Table 1 shows a majority of the cases were in the age group 21-30 years which is similar to the study conducted by (Maharani, 2013) and many other studies. This age group is subjected to more stress physically and mentally compared to different age groups. The intentional poisoning cases were 31 (83.78%), while accidental poisoning cases were 6 (16.21%), which is comparable to (Jesslin, 2010). In males, the intentional poisoning was 23 (74.19%), and accidental was 5 (83.3%), while in females intentional poisoning was 8 (25.8%), and accidental poisoning was 1 (16.6%). The accidental poisoning was mainly due to the ingestion of paraquat, rat killer paste, eucalyptus oil, corrosive agents.

According to the data collected, 19 (51.3%) patients had primary education, and 9 (24.3%) patients had no formal education which is in contrast to the study conducted in tertiary care hospital by (Abubakar, 2014) . The study revealed self-poisoning is more prevalent in subjects with no formal education. This may be due to the financial burden or lack of knowledge. Out of 37 cases, 27 patients within the age group 20-40 were married, and the remaining 10 were married above the 40-year age group.

Table 1: Showing Age wise distribution of male and female patients.

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>11-20 Years</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>21-30 Years</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>31-40 Years</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>41-50 Years</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>51-60 Years</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Above 60</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>9</td>
</tr>
</tbody>
</table>

With regard to occupation, the present study shows 18.9% of them were farmers, 16.2% of them were drivers, 16.2% of them were self-employed. This higher incidence might be due to easy availability and inappropriate usage of pesticides for farm-
ing. According to (Ponnusankar, 2015) study, their data revealed an increased incidence of poisoning among agricultural workers. Others were masons, housewives, gardener, shopkeepers and students with an impact of 8.1%, 5.4%, 5.4%, 2.7%, 2.7% respectively. The number of patients from the rural area was 21 (56.7%) and from the urban area were 16 (43.2%) which correlates with the finding of (Khosya and Meena, 2015) . The agents used for poisoning with incidence are illustrated in Figure 1 . 43.2% of the patients were not active on social media and are not aware of it (Facebook, WhatsApp) while only 27% of them were active on social media on a daily basis. About 16.2% of them do not use mobile personally. With respect to the alcohol & smoking status, out of 28 male patients, 16 (57.1%) of them were smoker and alcoholic. The ratio of smokers to nonsmokers is 1:1, whereas the ratio of alcoholics to non-alcoholics is 1.8:1.

CONCLUSIONS

This study was undertaken to determine the trends of poisoning in this region where socioeconomic status is low in most of the patients. Thus awareness programs for the prevention of such events shall be implemented. Our study results showed that pesticides are the major reason for poisoning with an intention of self-harming. India is a country where the primary profession is agriculture, awareness and education programmes on the usage of pesticides, and its toxic features should be given to the farmers. Stringent laws controlling the sale of pesticides to common public and agricultural workers should be introduced. Though no mortality was observed in our study, educating the farmers on the prophylactic measures before the use of pesticides may help prevent the morbidity and mortality due to poisoning. Accidental ingestion of pesticides can be prevented by encouraging the farmers on the use of natural pesticides and herbal fertilizers. Majority of the poisoning cases were seen in the age group of 21-30 where physical and mental stress is the major reason. Psychiatric counselling by the Psychiatrist was given to the patients emphasizing on their problems and how to overcome the same. Therefore, introducing a poison information centre and framing protocols for management of poison according to local poison patterns will help in reducing the incidence of the poisoning.

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