

BÖLGEMİZDE HYOSCYAMUS NİGER (HENBANE=BANOTU) ZEHİRLENMELERİ

HYOSCYAMUS NIGER (HENBANE) POISONINGS IN THE RURAL AREA OF EAST TURKEY*

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Özet

Bölgemizde ilkbaharda Henbane (*Hyoscyamus niger*) (bölgemizde " Deli Bat Bat " olarak bilinmektedir) kök ve yapraklarının yenilmesine bağlı tipik atropin zehirlenmesi sıklığıdır. Bu makalede 1981-1995 yılları arasında hastanemizde tedavi gören 216 hasta gözden geçirildi. Hastaların yaşları 1.5-14 yıl arasında; 72'si (%33.3) kız, 144'ü (%66.7) erkek olarak bulundu. Tedavi edilen hastaların hepsi şifa ile taburcu edildi.

Anahtar kelimeler: *Banotu, Bitki zehirlenmesi, Atropin entoksikasyonu*

Summary

In the region of Erzurum in East Anatolia, in Spring, typical atropine poisoning is seen in children who eat the roots and leaves of henbane (*Hyoscyamus niger*) known here as "Deli Bat Bat". In this article we have discussed 216 patients who were admitted to our hospital during the years 1981-1995. Within 24 hours the most patients were out of danger from the intoxication and showed improvement due to the use of only sufficient amounts of intravenous fluid to force diuresis. All the patients who had undergone treatment were discharged from hospital in good health.

Key words: *Hyoscyamus niger, Plant intoxication, Atropine poisoning*

Table 1. *Distribution of Age and Sex in the Cases of Hyoscyamus Niger Poisonings*

age (year)	female		male		total	
	n	%	n	%	n	%
0-1	-	-	-	-	-	-
2-3	5	2.3	6	2.8	11	5.1
4-7	44	20.4	98	45.4	142	65.8
8-12	19	8.8	39	18.0	58	26.8
> 12	4	1.8	1	0.5	5	2.3
total	72	33.3	144	66.7	216	100.0

Introduction

Henbane which belongs to the Solanaceae family and has been given such names as Infidel Opium, Jusquiamine and Hyoscyamus is known in this region as "Deli Bat Bat". Henbane which is widely found in rocky areas, uncultivated land and especially along roadsides, is 50-60 cm in length, light green in color, covered with fuzz, sticky when touched and with a two year life span. Alkaloids such as hyoscyamine, atropine, atropamine, and tropine are found in the leaves, seeds and especially in the roots of the plant (1). These alkaloids complete the typical atropine poisoning picture by paralyzing the nerve endings of the parasympathetic system. Every year in the spring and summer we frequently see children that have been poisoned by eating henbane in the rural area of Erzurum in East Anatolia. Accidental atropine poisoning was frequent (2-4). Even though in literature

various articles concerned with plant poisoning may be found (5-7), the basically important social-economic causes underlying the henbane poisonings have not been treated sufficiently. Therefore, we considered it necessary to make a study of the cases diagnosed as henbane poisonings and hospitalized in the Pediatric Clinic connected with the Medical School Hospital from 1981 to 1995.

Patients and Methods

We evaluated 216 cases hospitalized with the diagnosed of henbane intoxication during last 15 years retrospectively. We reviewed the cases according to age, sex, intoxication time, and their signs and symptoms.

Table 2. *Distribution of Signs and Symptoms Due to Atropine Poisonings in Our Cases*

signs	no. of cases	% of cases
flushing	208	96.3
dilatation of pupils	207	95.8
dizziness and ataxia	194	89.8
agitation	173	80.1
tachycardia	171	79.2
visual hallucinations	143	66.2
dryness of mouth	142	65.7
fever	86	39.8
blurred vision and photophobia	65	30.1
difficulty in swallowing	36	16.7
nausea and vomiting	32	14.8
delirium	28	13.0
tremor and convulsion	17	7.9
distention of the bladder and abdomen	14	6.5
headache	14	6.5
hoarseness and speech difficulty	5	2.3
skin rashes and desquamation	4	1.9
coma	3	1.4

Table 3. Distribution of Cases with Henbane Intoxication According to Years

years	total intoxication		henbane intoxication	
	n	frequency %	n	frequency %
1981-1985	341	31.4	106	31.4
1986-1990	283	24.4	69	24.4
1991-1995	259	15.8	41	15.8
1981-1995	883	24.5	216	24.5

Results

Between 1981-1995, 883 patients diagnosed as intoxication and 216 of these poisoned by eating henbane were hospitalized in the Pediatric Clinic of the Medicine School Hospital. The age and sex distribution of the affected children can be seen in Table 1. Of the children aged between 1.5-14 years, 72 (33.3%) female and 144 (66.7%) male. Of the 216 children, 152 (70.4%) came from villages and towns near Erzurum, 64 (29.6%) from the city's squatter house district. The distribution of the signs and symptoms that were found in the patients at the time of admission to the hospital were shown in Table 2. Since the hospitalized patients had been brought in after all the symptoms had made their appearance, none of their stomachs were washed. Patients were monitored for cardiac functions. Agitated and convulsive patients were given diazepam or phenobarbital. In order to promote diuresis in some of the patients, parenteral fluid treatment (3000-4000 mL/m² 1/3 saline solution) was begun immediately to establish urine output of 2 to 5 ml/kg/hour. Bladder catheterization was made to measure urine output. We did not use diuretics for the induction of diuresis and phisostigmine in our patients. This was continued until the patients condition improved. One hundred and thirty-four (62.0%) of the patients who recovered were discharged within the first 24 hours, 74 (34.3%) within 48 hours and the last eight (3.7%) on the 3rd day. All the patients that underwent treatment were discharged from hospital in good health. Between 1981-1995 years the distribution of 216 cases with atropine intoxication due to *H. niger* were shown in Table 3. While Henbane intoxication rate had decreased by the years, it still an important cause of poisonings.

Discussion

Anticholinergic toxicity appears in many forms, including atropine and other belladonna alkaloids, phenothiazines, antihistamines, cyclic antidepressants,

sants, plants, and mushrooms (3). The American Association of Poison Control Centers national data pertaining to anticholinergics is scattered among many categories and overlaps with other toxic substances listed; exposures to various types of anticholinergics including plants and atropine-containing antidiarrheal and antispasmodic drugs, numbered approximately 7400 in 1990 of which 3875 occurred in less than 18-year-old age group (8). Winter lasts too long and severe in East Anatolia. Especially in the village areas, many families find it difficult to find fresh fruit and vegetables. In the spring, people living in the villages or people of poor social-economic conditions living in the areas of small towns customarily eat plants (*Polygonum Cognatum*, *Pragopogan retieulatus* e.t.). The roots and leaves taste like lettuce and they have great appeal for children. The fact that the cases caused by poisoning only come to our hospital during the months from March to May and that the poisoned persons live in villages, squatter houses, is of great interest. Kürkçüoğlu (9) emphasized the importance of henbane poisoning with his report of 31 cases hospitalized between 1966-1969 in our region. It is of great importance to consider the fact that the majority of the patients were between the ages of 4-7 years and that the majority of them were male. The possible cause may be that the control of this age group of children is more difficult than the others. Usually people know the symptoms of this intoxication and they apply to emergency department with complaint of eating plant. Since the hospitalized patients had been brought in after all the symptoms had made their appearance, none of their stomachs were washed. In fact, since atropine is so readily absorbed by the digestive system, such a procedure is probably of little value. Patients who present to the emergency room with signs and symptoms of anticholinergic poisoning should be admitted for continous cardiac monitoring and symptomatic and supportive care (3,4). Those

patients with a history of exposure but without symptoms or signs of toxicity should undergo gastrointestinal decontamination. Seizures often respond to diazepam, 0.2 to 0.3 mg/kg/ dose IV, followed by phenobarbital (3,4,10,11). Activated charcoal should be administered, because it is extremely useful in adsorbing plant toxins. Dialysis does not help eliminate anticholinergics (12). Physostigmine may be used cautiously for severe sequelae as specific antidote of atropine. Physostigmine inhibits acetylcholinesterase, thus promoting the action of acetylcholine (13). In children, a dose of 0.02 mg/kg IV should be administered slowly and readministered in 5-minute intervals until a total dose of 2.0 mg is attained to establish the optimal effective amount (3,10). But we did not use physostigmine in any of the patients. Management of anticholinergic poisoning is based on clinical evaluation. Continuous cardiac monitoring is essential as is temperature control. Decontamination of the gastrointestinal tract is important, as gastric emptying can be delayed 12 hours or more. Because the emergency physician cannot correlate the expected toxicity with the exposure, gastric lavage is preferred. Activated charcoal should be administered; the use of cathartics in atropine toxicity is controversial (3). In our study it was emphasized that intoxication caused by *Hyoscyamus niger* was especially an important health problem in East Anatolia. Until enough importance is placed upon public health education, prevention of such poisonings is very difficult.

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