Republic of Lebanon—Ministry of Public Health—Epidemiological Surveillance Program

Chemical Incident Surveillance Monthly Report

Jan-May 2022

Summary

Since 1st of Jan 2022, 64 cases of chemical incidents were reported to the MOPH, including 9 clusters. Two deaths were reported; the first due to puffer fish and the second due to black mushroom.

Objectives

The primary objective is to build national surveillance capability. The secondary objectives are to identify chemical incidents, measure incidence, and describe products and exposures, as well as outcomes.

Methods

Cases presenting at the Emergency Department (ED) with acute or chronic toxicity, with or without signs of illness, with or without a toxic dose are included in the surveillance. Data is collected on a specific reporting form sent to MOPH where data is entered using DHIS2 platform.

Results

Between Jan 1st and May 30th 2022, 64 cases of chemical exposure were reported.

The highest proportion of incidents were reported from Bekaa (47%) and Akkar (36%) (Fig 3).

In total, 35 cases were sporadic and 29 were related to clusters (Table 1).

The median age was 17 years (Fig 2), 55% being female.

The most frequent type of chemical exposure was pharmaceutical products (35%), followed by mushrooms (25%), chemical household products (12%), insecticides and pesticides (10%), toxic gazes (7%) and snake bites (7%) (Fig 1).

Among the 64 cases, 8 cases were reported as suicide attempts (12.5%).

11 cases had hospital admission (27%).

Figure 1: Distribution of cases by chemical product (N=64), Jan-May 2022

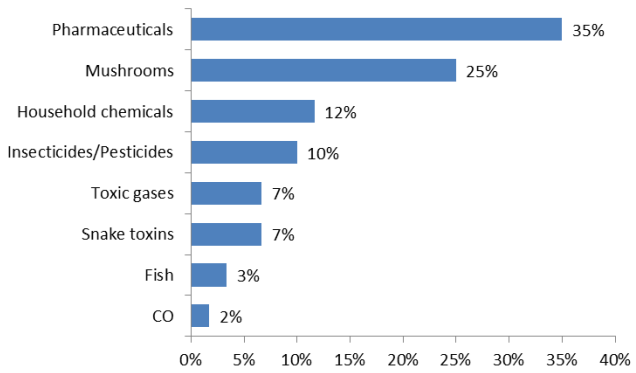


Table 1: Summary of chemical incident clusters, Lebanon, Jan-May 2022

ID	Date of exposure	Caza	Patient			Chemical				Actions
			Cases	Inpatient	Death	Formulation	Product	Route	Intention	
1	Jan 2022	Zahleh	2	0	0	Solid	Pharmaceuticals	Ingestion	Accidental	
2	Jan 2022	Akkar	5	5	0	Solid	Mushroom	Ingestion	Accidental	Raising awareness
3	Jan 2022	Akkar	3	0	0	Solid	Mushroom	Ingestion	Accidental	
4	Jan 2022	Akkar	6	0	0	Solid	Mushroom	Ingestion	Accidental	
5	Mar 2022	Bekaa	2	0	0	Gaz	Industrial gaz	Inhalation	Accidental	
6	Mar 2022	Akkar	2	1	1	Solid	Fish	Ingestion	Accidental	Raising awareness
7	Mar 2022	Qab elias	5	0	0	Gas	Propane	Inhalation	Accidental	
8	Jan 2022	Akkar	2	0	0	Solid	Pharmaceuticals	Ingestion	Accidental	
9	May 2022	Akkar	2	0	0	Solid	Pesticide	Ingestion	Accidental	

Figure 2: Age group distribution of reported incidents (N=64), Jan-May 2022

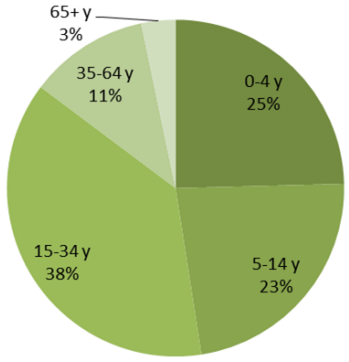
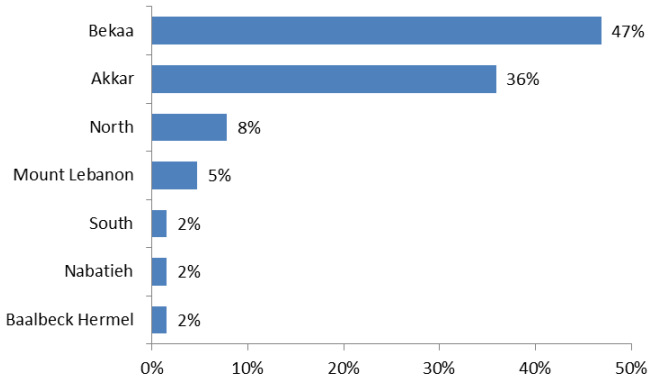
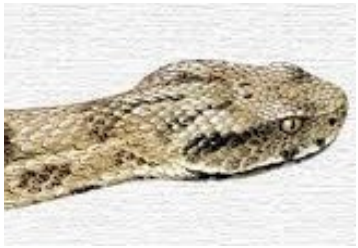


Figure 3: Geographical distribution of reported incidents, Jan-May 2022



Poisonous Snake: Macrovipera lebetinus		
Location	Middle East, North Africa, Near East, Milos island (Aegean sea)	
Presentation	The size of the snake is large. The females can reach a total length of 150 cm. The head is triangular, broad and distinct from neck head. The head is uniformly colored and it can occasionally be marked with a dark V-shape.	
Toxic product	*Vipera lebetina* venom contains: • Enzymes proteins: Serine proteinases, metalloproteinases, L-AAO, phospholipase A2, and hyaluronidase • Non enzymatic proteins: disintegrins, C-type lectin proteins (CLPs), natriuretic peptides, myotoxins, CRISP toxins, nerve and vascular endothelial growth factors (NGF/VEGF), cystatin, and kunitz-type proteinase inhibitors The venom has cytotoxicity activity against normal and cancer cell lines, antibacterial and antifungal activity, inhibits adhesion of melanoma and colon adenocarcinoma cells to extra-cellular matrix (ECM), and anti-tumor activity.	
Symptoms	• Symptoms appear within few minutes to few hours after the bite • At bite site: Swelling, pain spreading gradually, necrosis • Other symptoms: nausea, vomiting, abdominal pain, diarrhea, hypotension, coagulopathy, and bleeding	
Complications	• Renal failure • Case fatality can reach 50%	
Treatment	Snake antivenoms covering Macrovipera lebetina	
References	• Rima M, Alavi Naini SM, Karam M, Sadek R, Sabatier JM, Fajloun Z. Vipers of the Middle East: A Rich Source of Bioactive Molecules. Molecules. 2018 Oct 22;23 (10):2721. doi: 10.3390/molecules23102721. PMID: 30360399 • IKazemi, S. M., Al-Sabi, A., Long, C., Shoulkamy, M. I., & Abd El-Aziz, T. M. (2021). Case report: recent case reports of levant blunt-nosed viper Macrovipera lebetina obtusa snakebites in Iran. *Am. J. Trop. Med. Hyg*, *104*(5), 1870-1876	