

# The Utility of Poisoning Severity Score in Emergency Service

## Zehirlenme Şiddet Skorunun Acil Serviste Kullanımı

● Serdar Özdemir<sup>1</sup>, ● Abdullah Algin<sup>1,2</sup>

<sup>1</sup>University of Health Sciences Turkey, Ümraniye Training and Research Hospital, Clinic of Emergency Medicine, İstanbul, Turkey

<sup>2</sup>University of Health Sciences Turkey, Somalia Mogadishu Recep Tayyip Erdogan Faculty of Health Sciences, Mogadishu, Somalia

**Keywords:** Poison, Poisoning, toxicology

**Anahtar Kelimeler:** Zehir, zehirlenme, toksikoloji

### Dear editor,

The frequency and characteristics of poisonings vary according to the cultural and socioeconomic structure of the societies. It has been reported that the incidence of intoxication in patients admitted to emergency services worldwide is between 0.5% and 5% (1). In our country, according to the results of a small number of epidemiological studies, the annual poisoning incidence was found between 0.46% and 1.76% (1). It is estimated that this rate is higher in our country due to the fact that some poisoning patients are tried to be treated with traditional methods without applying to hospitals (1).

Poisoning can cause serious consequences depending on the agent and the time of admission to the hospital. Some of these patients are discharged after follow-up and treatment in emergency services. However, it is not enough to observe some patients in the emergency department, and close follow-up and treatment are required by hospitalization. In this case, the clinics, emergency services and intensive care units bring significant burden (2). Determining the severity of poisoning allows better determination of the true risks of these patients and development of treatment protocols (3).

A standard qualitative assessment for staging the severity of poisoning allows the determination of mortality and morbidity caused by poisoning and facilitates data analysis. In clinical toxicology, the glasgow coma score, which focuses on central nervous system toxicity, and Matthew-Lawson Coma scale, which focuses on barbiturate poisoning, have been used for many years (1,4). In addition, the Rumack-Matthew nomogram in paracetamol poisoning and the Done nomogram in salicylate poisoning are used for the clinic decisions. However, the usage area of these systems is limited (4,5).

The poisoning severity score (PSS) was developed by the International Program on Chemical Safety, the Commission of the European Union, the European Association of Poison Centers and Clinical Toxicologists for staging the severity of poisoning (6). The first version of PSS was introduced in 1990. Later, it was tested by the Poison Information Center of many countries and modified in 1994. PSS is used in all types of intoxication for staging adult and child intoxications (6,7). This scale includes both subjective symptoms and objective findings, regardless of the type, amount, serum and plasma concentration of the substance taken. PSS is calculated according to the most serious symptoms and signs of nine different organs or systems in the whole clinical process. Gastrointestinal tract, respiratory system, nervous system, cardiovascular system, metabolic balance, liver, kidney, hemopoietic system, muscular system, local effects on skin, local effects on eye, local effects from bites and stings are evaluated for PSS. PSS is scored from 0 to 4.0 indicates no symptoms and signs, 1 indicates mild grade poisoning, 2 indicates intermediate poisoning, 3 indicates severe symptoms and signs, and 4 indicates death (6,7).

In conclusion, grading the severity of poisoning with PSS as a standard scale will allow qualitative evaluation of the morbidity and mortality caused by poisoning, better determination of actual risks, and standardization of data.

### Ethics

**Peer-review:** Internally peer-reviewed.

### Authorship Contributions

Concept: S.Ö., A.A., Design: S.Ö., A.A., Literature Search: S.Ö., A.A., Writing: S.Ö., A.A.,

**Conflict of Interest:** No conflict of interest was declared by the authors.



**Address for Correspondence:** Serdar Özdemir, University of Health Sciences Turkey, Ümraniye Training and Research Hospital, Clinic of Emergency Medicine, İstanbul, Turkey

Phone: +90 505 267 32 92 E-mail: dr.serdar55@hotmail.com **ORCID ID:** orcid.org/0000-0002-6186-6110

**Received:** 11.05.2021 **Accepted:** 23.08.2021

**Financial Disclosure:** The authors declared that this study received no financial support.

## References

1. Karataş EG. Uludağ Üniversitesi Tıp Fakültesi Acil Servisi'ne gelen zehirlenme olgularında zehirlenme derecesinin evrenmesi sisteminin değerlendirilmesi. Dissertation Thesis. Bursa: Uludağ Üniversitesi, 2009. [\[Crossref\]](#)
2. Özdemir S, Kokulu K, Algın A, Akça H. Demographic and clinical characteristics of applications to the emergency service with mushroom intoxication. *Eurasian J Toxicol.* 2019;1:49-52. [\[Crossref\]](#)
3. Mégarbane B, Oberlin M, Alvarez JC, Balen F, Beaune S, Bédry R, et al. Management of pharmaceutical and recreational drug poisoning. *Ann Intensive Care.* 2020;10:157. [\[Crossref\]](#)
4. Matthew H, Lawson AAH. Acute barbiturate poisoning-a review of two years' experience. *Quart J Med.* 1966;35:539-552. [\[Crossref\]](#)
5. Shively RM, Hoffman RS, Manini AF. Acute salicylate poisoning: risk factors for severe outcome. *Clin Toxicol (Phila).* 2017;55:175-180. [\[Crossref\]](#)
6. Casey PB, Dexter EM, Michell J, Vale JA. The prospective value of the IPCS/EC/EAPCCT poisoning severity score in cases of poisoning. *J Toxicol Clin Toxicol.* 1998;36: 215-217. [\[Crossref\]](#)
7. Persson HE, Sjöberg GK, Haines JA, Pronczuk dG. Poisoning severity score. Grading of acute poisoning. *J Toxicol Clin Toxicol.* 1998;36:205-213. [\[Crossref\]](#)