**Surveillance of hazardous exposures to electronic cigarettes in Italy**

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**INTRODUCTION:** Liquid solutions (e-liquids) used in electronic cigarettes (e-cigarettes) represent a potential source of toxic exposures to nicotine. This study provides a description of human exposures to e-liquid identified by the Italian National Poison Control Centre in Milan (PCCM) in 2010-2013.

**METHODS:** The PCCM database was searched to identify human cases exposed to e-liquid from January 2010 to June 2013. Each case of interest was reviewed and classified according to the Poisoning Severity Score¹.

**RESULTS:** A total of 185 cases were identified. One case was reported both in 2010 and 2011, 42 cases in 2012, and 143 during the first 6 months of 2013. Some 15% of cases (Figure 1) were aged 5 years or less, 7% 6-19 years, 64% 20-49 years, and 11% 50 years or more. About 58% of cases were men and 41% women. The route of exposure (Figure 2) was 80% ingestion, 9% inhalation and ocular, and 4% dermal. About 38% of cases developed signs/symptoms possibly related to e-liquid exposure. Clinical effects (Figure 3) most frequently reported were oropharyngeal irritation (10%), nausea (7%), ocular irritation (6%), vomiting (5%). In all symptomatic cases severity of medical outcomes was **low**, but in two cases it was **moderate**. These last ones included: a 2-year-old child who developed ataxia, vomiting, and tachycardia following ingestion of a 3.6% nicotine solution; a 34-years-old patient who suffered headache, vertigo, gastric pyrosis, and dyspnea following unintentional e-liquid ingestion while inhaling from an e-cigarette.

Most of exposures were unintentional (96%) and occurred while the victim was using an e-cigarette (78%). Uncontrolled access to e-liquid by a young child accounted for 16% of cases, while 4% were victims of therapeutic error due to exchanging an e-liquid dropper bottle with an ocular or otological preparation in drops. Two cases developed cutaneous effects which were classified as suspected allergic reactions. Intentional exposure occurred in 4% of cases including two cases of suicide attempts and three cases of abuse (Table 1).

**CONCLUSIONS:** Although most of the observed cases of exposures did not develop severe clinical outcomes, it should be considered that e-liquids containing high nicotine concentrations which may pose a serious health threat especially to children. Ongoing collection of surveillance data from PCCs should be considered as an informative support for establishing the safety profile of e-liquids on the market.