
Impact of lockdown on pediatric poisonings

Efecto del confinamiento en las intoxicaciones pediátricas

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Consultations for suspected poisoning have remained stable over the last 2 decades. They account for about 0.3% of all consultations attended in Spanish pediatric emergency departments (EDs)^{1,2}. The declaration of the SARS-CoV-2 pandemic alert on March 14, 2020, kept minors confined to their homes for weeks³. The exceptional nature of this situation may have modified the factors favoring poisoning in the pediatric age group, both unintentional poisoning, due to access by the youngest children to toxic substances available in the home, and voluntary poisoning in adolescents, whether recreational or suicidal.

The main objective of this study is to compare the prevalence and epidemiological and clinical characteristics of consultations for suspected poison-

ing attended in a PED during the period of application of the state of alarm, in relation to those attended in the same period of 2019. The secondary objective is to describe the temporal evolution of these consultations during the different phases of the application of the state of alarm.

This is a retrospective observational study conducted in the ED of a tertiary level urban mother and child hospital (110 000 pediatric visits/year). Patients under 18 years of age who consulted for suspected poisoning during the period of time in which the state of alarm was applied in Catalonia (March 14, 2020 to June 18, 2020) and during the same period of the previous year were selected. The following epidemiological and clinical variables were collected from the computerized medical records: sex, age, reason for exposure (unintentional, recreational,

suicidal, other intentional poisonings), poisoning involved, severity (according to the Poisoning Severity Score⁴) and need for treatment or admission.

We analyzed the evolution of the prevalence of these consultations during the different main phases of the state of alarm in the health regions of Barcelona city and Metropolitan South (area of influence of the hospital): total confinement (14-03-2020 to 25-04-2020), period with permitted exits in time slots (26-04-2020 to 24-05-2020) and de-escalation period (25-05-2020 to 18-06-2020). The characteristics of the poisonings of patients seen in 2020 and 2019 were compared. Data were analyzed with the IBM® SPSS® Statistics version 25.0 for Windows® statistical software, applying tests for the study of data distribution (Kolmogorov-Smirnov) and comparison of quantitative (t for student, U for Mann-Whitney) and qualitative (chi-square, contingency table, Fisher's exact test) data. P val-

Table 1. Characteristics of consultations attended for suspected poisoning in the period from March 14 to June 18, 2019 and 2020

	Year 2019 N = 92 n (%)	Year 2020 N = 70 n (%)	p
Women	48 (52.2)	39 (55.7)	.654
Age	12.8 (2.3-16.1)	5.8 (2.0-14.3)	.139
Adolescents	47 (51.1)	26 (37.1)	.077
Mechanisms			.004
Unintentional	50 (54.3)	44 (62.9)	
Suicidal	8 (8.7)	16 (22.9)	
Recreational	18 (19.6)	5 (7.1)	
Other intentional reasons	16 (17.4)	5 (7.1)	
Toxics involved			.084
Drugs	49 (53.3)	37 (52.9)	
Cleaning products	6 (6.5)	13 (18.6)	
Other chemicals	18 (19.6)	11 (15.7)	
Alcohol and drugs	19 (20.7)	9 (12.9)	
Clinical manifestations			.545
Asymptomatic	42 (45.7)	30 (42.9)	
Mild clinical (PSS 1)	45 (48.9)	33 (47.1)	
Moderate clinical (PSS 2)	5 (5.4)	7 (10)	
Treatment	36 (40.9)	28 (40)	.908
Admission	23 (25)	26 (37.1)	.096

Quantitative variables are expressed as median (interquartile range) and qualitative variables as count (percentage).

ues $<.05$ were considered significant. Approval was obtained from the hospital's Research Ethics Committee.

During the application of the state of alarm, 12069 patients were seen in the ED, of whom 70 consulted for suspected intoxication (0.6%). The median age was 5.8 years (p25-75 = 2.0-14.3). The mechanism of exposure

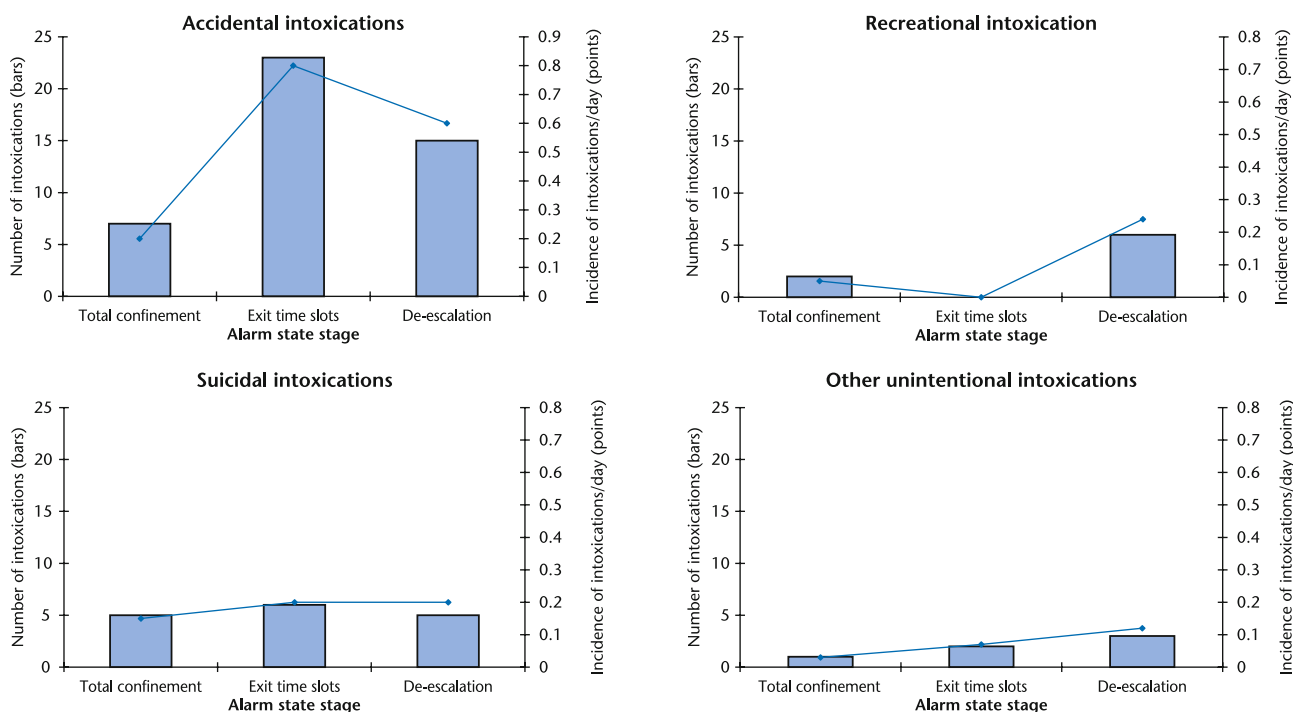
was unintentional in 44 cases (62.9%), suicidal in 16 (22.9%), recreational in 5 (7.1%) and for other intentional reasons (analgesic, anxiolytic, etc.) in 5 (7.1%). In the same period of 2019, 92 patients were seen after contact with intoxicants (0.3% of 28750 total consultations; $P < .001$). Statistically significant differences were found be-

tween the two periods in terms of the mechanism of poisoning (Table 1).

The incidence throughout the alarm state period was .4 patients/day during confinement; 1.1 patients/day in the slot phase, and 1 patient/day in the de-escalation phase. Figure 1 shows the evolution of consultations, according to the exposure mechanism, throughout the alarm period.

Although, as has been reported in other studies^{5,6}, the application of the state of alarm led to a marked decrease in ED visits (almost 60% in the study PED), this was much less marked in the case of pediatric poisonings, resulting in a significant increase in their prevalence compared to the previous year.

Similarly, Puiguriguer et al. observed an increase in the number of cases treated for poisoning with respect to the overall number of consultations in two adult emergency departments⁶. As for unintentional poisonings, children were kept at home 24 hours a day where, following recommendations to reduce the transmission of SARS-CoV-2, the use of cleaning products probably increased. The American Association of Poison Control Centers (AAPCC) reported a 62% increase in bleach contact consultations compared to 2019⁷. It is not surprising, therefore, that the data presented show a greater predominance of the unintentional mechanism in the

**Figure 1.** Evolution of poisoning consultations, according to the mechanism of exposure, throughout the alarm period.

2020 period, as well as a trend towards greater involvement of cleaning products.

Some of the negative side effects of confinement were social isolation, limited mobility and lack of help. It has been postulated that these, among other factors, have increased the risk of suicide during the current pandemic^{8,9}. A survey of more than 5,000 US adults during the peak of the first wave of the pandemic (June 2020) showed that more than 10% of respondents had seriously considered suicide in the previous 30 days, with the youngest age group (18-24 years) being the most affected¹⁰.

A greater psychological impact has also been observed in patients with pre-existing psychiatric disease¹¹. Other Spanish emergency departments that attend to the adult population have reported results similar to those presented in this study, with an increase in consultations for suicidal intoxication⁶.

With regard to recreational consumption by adolescents, previous studies carried out at the study center showed that this occurs socially, in leisure facilities and on public roads^{12,13}. It was therefore to be expected that recreational intoxications would be reduced during the application of the state of alarm, as shown by the results obtained. It was also to be expected that recreational intoxications would increase with the resumption of social interaction, as shown by the results obtained¹⁴. However, these results differ from those obtained in a survey of more than a thousand adolescents in Canada, which found no differences in the number of respondents who consumed alcohol before and after the start of confinement, but did detect an increase in the number of occasions of alcohol consumption after confinement. In most cases, this consumption occurred alone, with 32% of

cases involving face-to-face consumption with friends, but through technological resources¹⁵.

As for the severity of the poisonings, the patients attended during the state of alarm did not present more severe symptoms or a greater need for treatment. However, there was a tendency to require admission more frequently, probably in relation to the increase in suicidal intent and the need for psychological support.

The main limitation of this study is its single-center design with a small sample size that did not allow statistical significance to be reached in some cases.

In conclusion, during the period of application of the state of alarm, compared to 2019, there was an increase in the prevalence of pediatric poisonings with respect to the rest of the consultations in the PED. There was also a change in the mechanism of exposure, with an increase in suicidal intent and a decrease in other intentional poisonings.

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