International Journal of Contemporary Pediatrics
Sankar R et al. Int J Contemp Pediatr. 2022 Mar;9(3):279-282
http://www.ijpediatrics.com
pISSN 2349-3283 | eISSN 2349-3291

DOI: https://dx.doi.org/10.18203/2349-3291.ijcp20220454

Case Series

Case series of accidental sanitizer consumption in children during COVID lockdown

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Received: 17 January 2022
Revised: 07 February 2022
Accepted: 10 February 2022

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ABSTRACT

Accidental consumption of unknown substances is common in pediatric age group due to the playful and curious nature of children. Children aged between 1-5 years are most vulnerable for such accidental consumption and thus parents are instructed to keep harmful substances out of reach of children, more so in this age group. With the advent of the COVID19 pandemic in 2020, sanitizers became a common name in most households, making children vulnerable for accidental consumption of them. This case series describes a series of Accidental Sanitizer Consumption in Children during the COVID Lockdown. 8 children presented with accidental consumption of sanitizer in June 2020. The mean age of the children who presented to the hospital was 3.37±1.06 years. Among the 8 children who presented to the hospital, 5 were female and 3 were male. The lethal dose of 1-Propanol and 2-propanol components are 2.8 g/kg and 2.1 g/kg respectively. None of the children had consumed the lethal dose. None of the children from our case series had complaints of confusion, drowsiness, shallow breathing, mucosal irritation, dizziness, headache and bradycardia as the quantity of handrub sanitizer below the toxic dose. Thus, we would like to reinforce responsibilities of parents towards preventing accidental consumption in children as it affects the community at large.

Keywords: COVID lockdown, Unknown consumption in children, Accidental poisoning, Child safety

INTRODUCTION

Accidental consumption of unknown substances is common in pediatric age group due to the playful and curious nature of children.[1] Children aged between 1-5 years are most vulnerable for such accidental consumption and thus parents are instructed to keep harmful substances out of reach of children, more so in this age group.[2] Common substances prone for consumption include cleaning agents such as soaps and detergents, personal care products such as skin lotions and creams, and other pesticides and insecticides.[3] With the advent of the COVID19 pandemic in 2020, handrub sanitizers became a common name in most households as a proven precautionary step towards stopping the chain of transmission of the coronavirus.[4] Lockdowns are an additional measure adopted by various governments to halt the chain of coronavirus transmission.[5] As a result of the lockdowns, children all across have been confined to their households which makes them all the more vulnerable for accidental consumptions unless under direct supervision of their parent.

Handrub sterilium sanitizers contain combinations of 2-propanol and 1-propanol in various proportions.[6] Symptoms of 1-propanol consumption include confusion, drowsiness, bradycardia and shallow breathing. Symptoms of 2-propanol consumption include mucosal irritation, dizziness, headache and drowsiness.

CASE SERIES

We present the findings of 8 cases from our hospital:

Case 1

A 2 years old male child, first born to non-consanguinously married couple, immunized till date was brought with chief complaints of alleged history of consumption of sanitizer handrub followed by complaints of cough since evening.

Table 1: Vital signs of children who presented to the hospital.

	HR	RR	SpO2	Temperature	BP
Case 1	110	28	97	98.6	74/50
Case 2	92	24	99	99.1	90/64
Case 3	98	26	99	97.4	80/58
Case 4	90	23	98	98.2	88/60
Case 5	90	24	98	98.4	84/60
Case 6	104	26	99	99.2	80/64
Case 7	96	22	97	97.8	88/60
Case 8	92	26	97	98.8	90/60

No history of vomiting, confusion, drowsiness, shallow breathing present. On examination, vitals of the child were stable as per table 1. Investigations of the child were sent as per Table 2 and were normal. Child was kept in observation for 24 hours and discharged.

Case 2

A 4 years old female child, second born to non-consanguinously married couple, immunized till date was brought with chief complaints of alleged history of consumption of sanitizer handrub while playing. No history of cough, vomiting, confusion, drowsiness, shallow breathing present. On examination, vitals of the child were stable as per table 1. Investigations of the child were sent as per Table 2 and were normal. Child was kept in observation for 24 hours and discharged.

Case 3

A 3 years old male child, second born to non-consanguinously married couple, immunized till date was brought with chief complaints of alleged history of consumption of sanitizer handrub while playing. No history of cough, vomiting, confusion, drowsiness, shallow breathing present. On examination, vitals of the child were stable as per table 1. Investigations of the child were sent as per Table 2 and were normal. Child was kept in observation for 24 hours and discharged.

Case 4

A 4 years old female child, second born to non-consanguinously married couple, immunized till date was brought with chief complaints of alleged history of consumption of sanitizer handrub while playing. No history of cough, vomiting, confusion, drowsiness, shallow breathing present. On examination, vitals of the child were stable as per table 1. Investigations of the child were sent as per Table 2 and were normal. Child was kept in observation for 24 hours and discharged.

Case 5

A 3 years old female child, first born to non-consanguinously married couple, immunized till date was brought with chief complaints of alleged history of consumption of sanitizer handrub while playing. No history of cough, vomiting, confusion, drowsiness, shallow breathing present. On examination, vitals of the child were stable as per table 1. Investigations of the child were sent as per Table 2 and were normal. Child was kept in observation for 24 hours and discharged.

Case 6

A 5 years old male child, first born to non-consanguinously married couple, immunized till date was brought with chief complaints of alleged history of consumption of sanitizer handrub while playing along with complaints of cough and 2 episodes vomiting. No history of confusion, drowsiness, shallow breathing present. On examination, vitals of the child were stable as per table 1. Investigations of the child were sent as per Table 2 and were normal. Child was kept in observation for 24 hours and discharged.

Case 7

A 2 years old female child, first born to non-consanguinously married couple, immunized till date was brought with chief complaints of alleged history of consumption of sanitizer handrub while playing along with complaints of cough. No history of vomiting, confusion, drowsiness, shallow breathing present. On examination, vitals of the child were stable as per table 1. Investigations of the child were sent as per Table 2 and were normal. Child was kept in observation for 24 hours and discharged.

Case 8

A 4 years old female child, first born to non-consanguinously married couple, immunized till date was brought with chief complaints of alleged history of consumption of sanitizer handrub while playing along with complaints of cough and 2 episodes vomiting. No history of confusion, drowsiness, shallow breathing present. On examination, vitals of the child were stable as per table 1. Investigations of the child were sent as per Table 2 and were normal. Child was kept in observation for 24 hours and discharged.

Table 2: Complete blood count of children who presented to the hospital.

	Hb	TC	DC	MCV	MCH	MCHC	Platelet Count	RBC	Na	K	Cl	HCO3
Case -1	9.8	13700	N60L27m10	70	24	35	4.00	3.39	135	3.9	96	18
Case -2	11.8	9800	N70L23M7	73	26	33	3.22	4.10	133	5.0	99	22
Case -3	12.5	6500	N50L30M5	70	22	29	2.44	3.32	139	4.1	99	20
Case -4	13	7400	N54L35m7	75	24	30	2.96	4.13	137	4.2	99	21
Case -5	11.2	5600	N70L19M1	72	26	31	2.99	3.97	140	3.8	98	20
Case -6	12.2	6500	N60L21M3	71	24	30	1.96	3.91	144	3.9	98	21
Case -7	11.9	4900	N61L19M17	72	26	26	2.80	4.21	133	4.6	98	22
Case -8	10.1	7300	N69L23M7	74	25	28	3.10	3.53	140	4.2	99	22

DISCUSSION

A total of 8 children presented to our hospital with accidental consumption of hand rub sanitizer in June 2020. The mean age of the children who presented to the hospital was 3.37±1.06 years. Among the 8 children who presented to the hospital, 5 were female and 3 were male.

The lethal dose of the active principle 1-Propanol and 2-propanol components are 2.8 g/kg and 2.1 g/kg respectively.[7] None of the children had consumed the lethal dose.

From our case series, the 8 children who presented to our hospital were clinically stable and were able to be discharged relatively quickly due to a smaller number of complications in course of stay. Most of the children had consumed very minute quantity of hand rub sanitizer and it was below the toxic dose. This further explains why the children could be discharged relatively quickly.

We would like to highlight the fact that despite these children presenting in a clinically stable condition, there was a potential for severe pneumonia in form of aspiration pneumonitis or symptoms due to 2-propanol and 1-propanol absorption.[8]

None of the children from our case series had complaints of confusion, drowsiness, shallow breathing, mucosal irritation, dizziness, headache and bradycardia. This can be attributed to the quantity of hand rub sanitizer consumed and the fact that it was below the toxic dose.

The role of parents plays an important role in care and well-being of children. Though parents are instructed to keep harmful substances out of reach of children, during the course of the COVID-19 lockdowns, the levels of parental supervision on children have reduced despite stay-at-home restrictions due to parents being engrossed in Work-From-Home activities that distract them from quality care of their child.[9,10]

Moreover, these cases were admitted during the COVID-19 lockdown in 2020 at a time when the capabilities of healthcare services were stretched to maximum capacity and availability of beds for acutely sick individuals was a logistical challenge.[11,12] Thus, we would like to reinforce responsibilities of parents as it affects the community at large.

CONCLUSION

COVID-19 lockdowns have changed our way of life and have changed the products available in our households. Children who spend greater duration at home are vulnerable to unknown consumptions unless under close parental supervision. Parents must be reminded to keep harmful substances out of reach of children as it has the potential for causing morbidity and mortality if consumed in lethal dose.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

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Cite this article as: Sankar R, Kadambi P. Case series of accidental sanitizer consumption in children during COVID lockdown. Int J Contemp Pediatr 2022;9:279-82.