

## CARBOFURAN INTOXICATION IN MALES, ALSO CALLED CAT KILLER PILLS

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**Abstract:** *Carbofuran is a frequently used insecticide, acaricide, and nematicide that is used in the field of agriculture all around the world. Presently, carbofuran is commonly used in malicious poisoning. It is among the class of insecticides that are used to eradicate soil-dwelling pests from crops. Approximately 20,000 tonnes of this product is used annually. As effective as it is in controlling insects, it has notorious side effects on humans and is now introduced as "Cat Killer Pills." A 26-year-old male, a healthy student of 12th standard, presented with a suicidal attempt with this 'Cat Killer Pill.' 6 hours after ingestion, he experienced weakness, fatigue, sweating, breathing difficulties, and disorientation. He was initially treated at another hospital, where he was intubated due to a suppressed respiratory system. Upon presentation, he was intubated. He was treated with Atropine and Pralidoxime, which helped in his cure. The results of this study suggest that in addition to the cholinolytic effects of atropine, Pralidoxime may prevent and antagonize the acute toxicity of carbofuran by reactivating cholinesterase and rapid elimination of carbofuran.*

**Keywords:** Carbofuran Intoxication, Poisoning, Pesticide, Males, Human Health, Toxicological Studies

### Introduction

Carbofuran is an inodorous carbamate pesticide that kills insects and nematodes in the crops like soybeans and potatoes. However, it can cause serious damage to human eyes and skin and cause a burning sensation (Kempuraj et al., 2022). On exposure to high temperatures, it releases toxic nitrogen oxides. When inhaled, touched, or ingested, it can be fatal. Figure 1 below shows the physical presentation of carbofuran available in Pakistan.

It is highly soluble in water and has a half-life of 1-4 months in the soil. It can also be used to cleanse the soil in fruit and vegetable fields. Being a systemic insecticide, it enters the plant through its roots and is then absorbed in all its organs to perform as an insecticide. (Lv et al., 2022).

In humans and vertebrates, mainly dogs and rats, this chemical is highly toxic and can lead to serious injuries (Hossain et al., 2023). In addition, birds can also be affected if they come in contact with it (Ali et al., 2021). A single grain of carbofuran can risk the life of the bird. Due to its fatal nature, it has been used to poison stray animals and domestic pets worldwide. Hence it is banned in developed countries like the United States to be used as a pesticide.

Commercial applicators spray carbofuran to prevent human contact with the chemical.

(Saqib et al., 2021). However, such facilities are rarely available in developing countries, and occupational hazards have often been reported

(Mishra et al., 2020). Its activity can cause alteration in the nervous system and cause disruption.



Figure: Physical Presentation of Carbofuran Brought by the Patient's

Carbofuran is highly toxic after acute oral administration. The main systemic effect of Carbofuran poisoning in short- and long-term toxicity studies appears to be cholinesterase inhibition. No evidence of teratogenicity has been found in reproductive toxicity studies. Based on available

studies, carbofuran does not appear to be carcinogenic or genotoxic.

It is rare in medical history that carbofuran is used for the suicidal attempt. It is never reported in Pakistan.

### Case Presentation

Historically, in Pakistan, the number of suicidal cases has been limited. However, in the recent past, the trend of such cases is increasing. Being in the Emergency Department, I am witness to many cases of suicidal attempts. A similar case is reported in the Emergency Department, presented here as a case study.

A school-going young chap of 12 standards from Fateh Jang, Punjab, was brought to the Emergency Department and attempted suicide. The case was interesting and unique because the patient used carbofuran for this purpose, which is rare in global medical history. The patient bought carbofuran from the local market.

Reportedly, the patient was found unconscious in his room in the morning. According to the family, he complained of fecal and urinary incontinence and involuntary muscle movements and went to the local hospital, where he was intubated secondary to the respiratory system. The patient was referred for further management.

On further evaluation and history, the patient recalled all events gradually, that he brought this drug "purple granules" called "Cat Killer Pills" from the local market, swallowed its handful, and then developed symptoms in twelve hours and became unconscious. The family found him collapsed in his room and brought him to another hospital, where he was intubated and initially managed. After twelve hours, he was received in the emergency with a GCF of 11. Upon examination, he was intubated, with BP of 140/80, SPO<sub>2</sub> = 96%, GCS 11/15, bilateral pinpoint pupils, moving all limbs, no other neurology found, and the chest had bilateral conducting sound on auscultation. Copious secretions on the suction of endotracheal tube, suspected organophosphate poisoning on clinical findings predominantly neuromuscular effect, but also showed some muscular effect, so, started Atropin infusion @ 1 mg/hr and then Pralidoxime 2 mg. He was admitted to the critical unit for observation for three days on Atropine infusion, which was tapered down gradually. Patient recovery was excellent. He was clinically improved, recovered after treatment, and discharged.

### Conclusion:

Carbofuran and its major metabolites can cross the placental barrier and seriously affect the maternal-placental-fetal unit. Carbofuran's toxicity can be potentiated by simultaneous exposure to other

We report here an incident wherein a young student used carbofuran for suicide.

cholinesterase inhibitors. It is rare to find cases where the carbofuran has been used for a suicidal attempt; at least no prior such case has been reported in Pakistan. The present case is unique. The patient was treated timely, and we managed to save them alive.

### Conflict of interest

The authors declared absence of conflict of interest.

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