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Preliminary Study of the Effect on the Lungs Due to the Consumption of Cocaine Base Paste

Estudio preliminar de la repercusión pulmonar por consumo de pasta base de cocaína

To the Editor:

In the last ten years, there has been a significant increase in the consumption of cocaine base paste (CBP) in Uruguay, Chile and Argentina, which has become a real public health problem given its biological, psychological and social repercussions. Cocaine paste is an intermediate product in the preparation of cocaine chlorohydrate and it has a variable percentage of cocaine, other alkaloids, impurities and fillers.[1] It is smoked using either tin cans or plastic pipes, or in a cigarette with marihuana or tobacco. Its composition is different from that of crack, another form of smokable cocaine that is considered to have a higher purity than CBP. Based on reports of clinical cases analyzing the consumption multi-drug abuse, authors have related the use of crack, widely consumed in the US and Europe, with asthma exacerbation, bronchitis, bronchiolitis, pulmonary edema, alveolar hemorrhage, eosinophilic pneumonitis and barotrauma.[2,3] There are, however, no studies that characterize the respiratory toxicity of cocaine paste.

We present a preliminary study with the aim of determining the main clinical manifestations and lung complications related to CBP abuse. Ours is a single-center observational retrospective descriptive study of CBP users admitted to the "Portal Amarillo" Center for detoxification for a period of three months. Excluded from the study were patients who had been smoking CBP for less than one year and those with previous lung disease or human immunodeficiency virus (HIV) infection. Data were taken from their medical history and patients underwent: chest radiography, thoracic high-resolution computed tomography (HRCT), respiratory function and post-effort testing, Doppler ultrasound and hemogram. None of the patients presented clinical symptoms of cocaine overdose. Seventeen male patients were studied, with a mean age of 26. Multi-drug use was a factor in all cases, with current associated use of marihuana and tobacco. CBP consumption time ranged from 2 to 6 years, and 82% of the subjects had a history of cocaine chlorohydrate use. All patients presented respiratory symptoms; prevalent clinical manifestations were: cough with carbonaceous expectoration, dyspnea and bronchospasm. Chest radiography revealed bilateral perihilar radiopaque infiltrates in every case. On CT, 6 patients presented nodular images occupying the air space, with areas of air-trapping (in two cases with obstruction of the small airway). Respiratory function tests and Doppler ultrasound were normal in all patients. Three patients presented eosinophilia.

Clinical manifestations in CBP users are frequent and do not seem to be related with specific lung disease. According to the literature, these symptoms have been reported in crack users a few hours after the last consumption,[3] while in these users there was an abstinence period of two to three weeks. Carbonaceous expectoration is a result of the inhalation of impurities and products from the combustion of this type of drug use.[4] The radiological findings were consistent with chronic tracheobronchitis and pneumonitis, associated with eosinophilia in three cases, which may suggest an immunological response as described in "crack lung".[5] CT alterations demonstrated the chronic irritation of cocaine and products of its combustion in the lower respiratory apparatus. Although many of these finding can be explained by concomitant use of tobacco and marihuana, Tashkin et al. hypothesize that crack consumption could aggravate the damage caused by tobacco habit[6]. We found no pulmonary hypertension, described in cocaine users, nor any respiratory function alterations, coinciding with studies in crack users.[3] This preliminary study reveals similarities in lung repercussions of CBP with the crack study, both in the context of multi-drug use and in cases reported. "CBP lung" should be evaluated and characterized with a greater number of patients, selecting user groups that do not consume either tobacco or marihuana, and including other studies such as bronchoalveolar lavage, evaluation of the pulmonary alveolar-capillary permeability and local immunological response.

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