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Title: Preliminary survey of respiratory alterations caused by smoke inhalation in survivors of the Kiss nightclub fire in Santa Maria, Rio Grande do Sul, Brazil

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Body: Background: The Kiss nightclub fire on 27 January 2013 in Santa Maria, Brazil left more than 1000 injured people and 242 deaths in consequence of asphyxiation caused by carbon monoxide and cyanide poisoning and extensive cutaneous burns. The long term respiratory effects caused by smoke inhalation cyanide still poorly understood. Objective: To identify early respiratory alterations in smoke-inhalation victims. Methods: We performed a cross-sectional study from assessments carried out by multidisciplinary team of the Integrated Center for Victims of Accident in the University Hospital of Santa Maria in the period from February to May. The physiotherapy assessment consisted of demographic profile, respiratory signs and symptoms (standardized questionnaire), maximal inspiratory pressure (Pimax) and submaximal functional capacity (three-minute step test). Results: 233 subjects (102F, 131M, mean age 26,94±9,84 years, BMI 23,55 ± 5,99 kg/m²) were evaluated. The most prevalent signs and symptoms were: dry and productive cough (39,91%), alteration of respiratory rhythm (25,75%), fatigue (20,17%), breathlessness (18,02%) and chest pain (14,59%). Among 171 subjects who underwent Pimax measurement, 95 obtained values greater than 80% predicted value, 23 obtained between 60 and 80% of predicted e 56 less than 60% of predicted. The number of steps climbed in 3 minute step test (n=180) was 68,4±16,48 steps. Conclusions: These preliminary results emphasize the important role of long-term follow up of respiratory symptoms among survivors of the Kiss nightclub fire.