

Correspondence

Concerning trends in cardiogenic shock-related admissions among United States cannabis users



To the Editor,

Cannabis is one of the most common recreational drugs used in the United States. A significant increase in the trend of cannabis use has been reported in the US in the past decade [1,2]. The effects on the cardiovascular system has been well reported with cannabis use. Cannabis use poses a risk of acute cardiovascular events with a high risk of acute myocardial infarction in young individuals [3]. A significantly high risk of mortality, nearly 4 times, after myocardial infarction (MI) has been reported in cannabis users compared to the non-users [4]. These individuals may also develop post-MI complications like a cardiogenic shock which could influence the short-term and long-term outcomes. Besides, the presence of car-

diogenic shock leads to a high burden of mortality ranging from 55 to 72% [5]. However, there is no data available regarding the trend of cardiogenic shock among cannabis-related hospitalization. We conducted a retrospective analysis using the National Inpatient Sample (NIS) datasets (2007–2014), provided by the Agency for Healthcare Research and Quality-sponsored Healthcare Cost and Utilization Project (<https://www.hcup-us.ahrq.gov/nisoverview.jsp>). We identified hospitalizations with known cannabis use and cardiogenic shock. The primary outcomes were the frequency and trends of cardiogenic shock per 100,000 hospitalization among cannabis users. We identified a total of 3,307,312 nationwide hospitalizations with known cannabis use from 2007 to 2014. Of these, 0.12% (n = 4059) had experienced cardiogenic shock during the hospitalization. Over a period of 8 years, we noticed a 3.7 fold increase (from 56 to 208) in the frequency of in-hospital cardiogenic shock per 100,000 hospitalizations among cannabis users (Fig. 1). On further subgroup analysis, an increase of 2.8 and 4.2

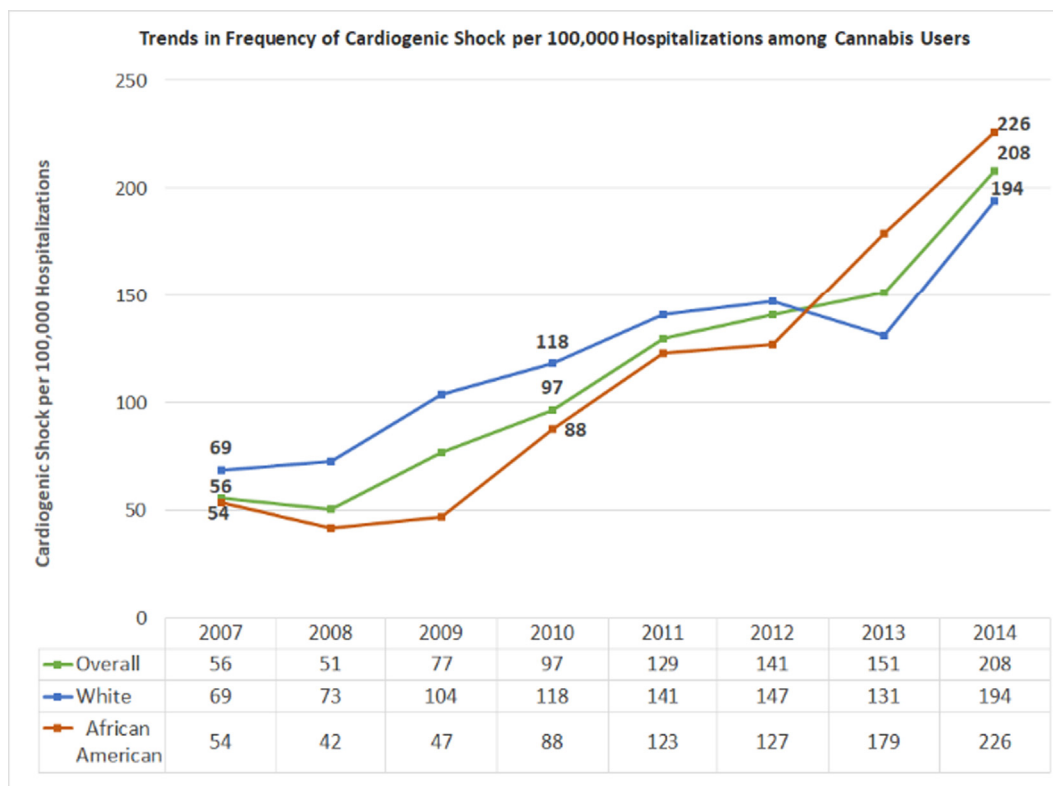


Fig. 1. Trends in cardiogenic shock-related admissions among United States cannabis users from 2007 to 2014.

fold in the cardiogenic shock frequency was reported in white and African American cannabis users, respectively. More interestingly, the frequency of cardiogenic shock among African American cannabis users surpassed the frequency of cardiogenic shock in whites between 2012 and 2014.

The most noteworthy finding of this large-scale analysis is a nearly four-fold increase in the cardiogenic shock among cannabis users during the study period. Grigoriadis et al. reported a case with hospitalizations due to recurrent cardiogenic shock and severe left ventricular dysfunction in a patient with cannabis use [6]. The presence of cardiogenic shock has been reported as an independent predictor of mortality (OR 6.0, CI 4.9–7.4, $p < 0.001$) among cannabis users having acute myocardial infarction [7]. In addition, there is a racial disparity in the frequency of the cardiogenic shock, with a higher increase in African Americans compared to the whites. Similarly, studies have reported concerning trends in the frequency of cannabis use among African Americans, however, this is the first report to date highlighting the increased underlying risk of cardiogenic shock in African American cannabis users.

In conclusion, this report highlights rising trends in cardiogenic shock with a racial disparity among the United States cannabis users. With a growing use of recreational cannabis use, more number of admissions with severe complications including cardiogenic shock and subsequent morbidity and mortality could be expected in this population in the near future. This may adversely affect the healthcare infrastructure and warrants further interventions raising awareness regarding the deleterious effects of cannabis especially among chronic habitual users and curb concerning trends in cardiovascular outcomes and associated racial differences.

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Muhammad Uzair Lodhi

Department of Internal Medicine, Eastern Idaho Regional Medical Center, Idaho Falls, ID, USA

Sandeep Singh

Department of Clinical Epidemiology, Biostatistics and Bioinformatics, Amsterdam University Medical Center, AMC, Netherlands

Brisandi Ruiz Mercedes

Hospital Aristides Fiallo Cabral, Dominican Republic

Faizan Ahmad Malik

Department of Internal Medicine, Texas Tech University Health Sciences Center at Permian Basin, Odessa, TX, USA

Rupak Desai *

Division of Cardiology, Atlanta VA Medical Center, Decatur, GA, USA

* Corresponding author at: Division of Cardiology, Atlanta VA Medical Center, 1670 Clairmont Rd, Decatur, GA 30033, USA.

E-mail address: rdesa30@emory.edu

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