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Well-being, psychosocial factors, and side-effects among heroin-dependent inpatients after detoxification using buprenorphine versus clonidine

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Abstract

Previous studies comparing buprenorphine and clonidine provided little information about subjective factors associated with the effective management of opioid withdrawal. This study sought to compare detoxification programs using these medications with regard to side-effects and related distress, general well-being, perceived self-efficacy and social support. A total of 200 treatment-seeking heroin-dependent patients, aged 18–50, were randomly assigned to buprenorphine or clonidine inpatient withdrawal treatments over 10 days followed by 11 days of relapse prevention measures. A semi-structured interview and a battery of self-rating scales assessing parameters of the interest were administered to the patients who completed the 10-day detoxification protocol with buprenorphine ($n=90$) and clonidine ($n=50$). Chi-square statistics and analysis of covariance were performed to examine between-group differences. Compared with patients treated with clonidine, patients who received buprenorphine developed significantly less side-effects and related distress, and had higher senses of well-being, self-efficacy and social support. The findings suggest that buprenorphine is preferable for inpatient detoxification due to its side-effects profile and positive effects on well-being and psychosocial variables. These early benefits of buprenorphine could enable consequent maintenance treatment.

Keywords: Buprenorphine; Clonidine; Inpatient detoxification; Side-effects; Well-being; Self-efficacy; Social support

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1. Introduction

Heroin- and other opioid-dependent patients have become a burdensome problem for health and other social services. Medical problems (Cherubin & Sapira, 1993; O'Connor, Selwyn, & Schottenfeld, 1994; Sporer, 1999; Stein, 1990), psychiatric comorbidity (Brooner, King, Kidorf, Schmidt, & Bigelow, 1997; Darke & Ross, 1997; Ziedonis & Brady, 1997) and other behavior-related problems such as family dysfunction, unemployment, and legal problems (Brewer, Fleming, Haggerty, & Catalano, 1998; Liebschutz, Mulvey, & Samet, 1997; Regidor, Barrio, de la Fuente, & Rodriguez, 1996; Wyshak & Modest, 1996) are highly prevalent among heroin-dependent individuals.

The effective management of opioid withdrawal is a critical first step in treating patients and subsequent proper and effective management often depends on beneficial outcome of the primary detoxification (O'Connor & Fiellin, 2000). The opioid withdrawal syndrome consists of subjective symptoms and objective signs resulting from the neuro-physiological rebound in the organ systems affected by opioids. In order to address both components of the syndrome in the treatment program, the management of opioid withdrawal combines general supportive measures (a safe environment, adequate nutrition, and careful monitoring) and pharmacological treatment including non-opioid and opioid medication. Detoxification using non-opioids focused primarily on clonidine, a α_2-agonist, which diminishes norepinephrine activity during opioid withdrawal (Gossop, 1998). Detoxification using opioid agonists is based on the mechanism of cross-tolerance, in which one opioid (e.g., heroin) is replaced by another (e.g., methadone) that is consequently slowly tapered (O'Connor & Fiellin, 2000).

Recently, buprenorphine, a derivative of the morphine alkaloid thebaine, with a partial agonist effect on the μ-receptor and a weak antagonist at the κ-opioid receptor has been studied as a treatment for opioid withdrawal (Amass, Bickel, Higgins, & Hughes, 1994; Nigam, Ray, & Tripathi, 1993). Partial stimulation of the former induces a positive psychoactive effect reducing craving and helping people to comply with treatment regimens (Jones et al., 2004). Buprenorphine showed an improved safety profile, with less respiratory depression, reduced risk of fatal overdosing, and milder withdrawal effects when compared with methadone (Lintzeris, Bammer, Rushworth, Jolley, & Whelan, 2003). The side-effect profile is similar to other opioid agonists; common side effects are nausea, headache, withdrawal syndrome, non-specific pain and constipation (Jones et al., 2004). These side effects are milder than with other opioid agonists and are easily manageable, often resolving within 3 weeks (Ling & Smith, 2002; Mello et al., 1995).

In controlled clinical trials, buprenorphine has been found superior to clonidine plus symptomatic treatment in retaining patients in treatment programs, reducing their opioid abuse and decreasing dropouts after detoxification (Digiusto et al., 2005; Fingerhood, Thompson, & Jasinski, 2001; Gowing, Ali, & White, 2004; Ling et al., 2005; Lintzeris, Bell, Bammer, Jolley, & Rushworth, 2002; Palmstierna, 2004). Likewise, it has been widely used to manage withdrawal providing good symptomatic relief and little rebound withdrawal on discontinuation (Cheskin, Fudala, & Johnson, 1994; DiPaula, Schwartz, Montoya, Barett, & Tang, 2002; Gibson, Doran, Bell, Ryan, & Lintzeris, 2003). Even low doses are better than clonidine but higher doses (6 to 16 mg/day) appear to be necessary to achieve patient improvement. Cheskin et al. (1994) found mean peak urge for an opioid during the first 3 days of detoxification to be lower with buprenorphine; and flexible rather than fixed drug regimen has been recommended with buprenorphine (Lintzeris et al., 2002). Entry rates into post-detoxification programs were found to be higher in patients on buprenorphine (Digiusto et al., 2005; Kakko, Svanborg, Kreek, & Heilig, 2003), and it was suggested that buprenorphine might improve quality of life (Giacomuzzi, Ertl, Kemmler, Riemer, & Vigl, 2005).