

Combining alprazolam with systematic desensitization therapy for dental injection phobia

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Abstract

To determine whether a benzodiazepine facilitates systematic desensitization, 144 subjects with dental injection phobia received systematic desensitization in combination with placebo or one of two doses of alprazolam (0.5 mg or 0.75 mg). Systematic desensitization therapy included computer-controlled presentation of digitized video segments followed by in vivo exposure segments, culminating in an actual dental injection. Subjects advanced to the next hierarchy segment when low anxiety was reported during a segment. Alprazolam and placebo groups progressed at the same rate. The 0.75 mg group had elevated heart rates while watching video segments compared with placebo. In a subsequent behavioral avoidance test (during which subjects were randomized to a new drug condition), there was no indication that state-dependent learning had occurred. Dental fear was reduced similarly in all groups for 1 year after study completion. No advantage was found to combining alprazolam with systematic desensitization for dental injection phobia.

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1. Introduction

Repeated exposure to a feared situation under safe circumstances normally produces a persistent decrement in anxiety (Marks, 1987). There is considerable evidence supporting the effectiveness of exposure therapy to reduce anxiety (Barlow, 2002). The argument has been made that pharmacologically reducing anxiety in the presence of the feared situation should lead to faster extinction through diminishing avoidance behavior and reducing unpleasantness (Lader & Mathews, 1968; Marks, Viswanathan, Lipsedge, & Gardner, 1972; Wardle, 1990; Whitehead, Blackwell, & Robinson, 1978). Therapists have raised the concern that combining benzodiazepines with exposure will reduce therapeutic effectiveness or lead to relapse (Sartory, 1983), but the clinical literature on this issue is not clear-cut (Foa, Franklin, & Moser, 2002). In a review of the literature on acute benzodiazepine administration in combination with exposure therapy for phobias, Wardle (1990) concluded that benzodiazepine use had either no influence on treatment outcome or mildly positive effects.

In contrast, more recent studies investigating the effects of relatively large doses of the high-potency benzodiazepine, alprazolam (Xanax[®]), indicate that both chronic and acute administration of the drug during exposure therapy leads to greater relapse of anxiety than does exposure therapy alone (Marks et al., 1993; Wilhelm & Roth, 1997). Likewise, animal studies suggest that benzodiazepines interfere with extinction of fear responses, and that state-dependent learning during extinction contributes to the interference (Bouton, Kenney & Rosengard, 1990). Furthermore, benzodiazepines have side-effects (Bickel, Hughes, & Higgins, 1990; Coldwell, Milgrom, Getz, & Ramsay, 1997), which could impede the learning that occurs during exposure. Foa and Kozak's (1986) fear modification theory would predict that less "emotional processing" and fear extinction would occur during exposure if anxiolytic medications impede the "propositional fear-network" in memory from being activated and modified. State-dependent learning might prevent generalization of gains to the non-drug state (Jensen & Poulsen, 1982). Others have proposed that exposure to somatic symptoms is an important component of therapy that may be blocked by benzodiazepines (Beckham, Vrana, May, Gustafson, & Smith, 1990). Another concern is that, if patients attribute fear reduction to the drug, this belief may contribute to a loss of therapeutic gains when the drug is no longer administered (Bandura, 1977; Basoglu, Marks, Kilic, Brewin, & Swinson, 1994; Johnston & Gath, 1973).

Nevertheless, it has been suggested that low doses of alprazolam may be useful early in exposure therapy (Marks et al., 1993). The assumption is that the rate of exposure therapy could be increased for patients who are highly phobic or initially reluctant to begin exposure therapy. Since low doses of alprazolam produce less memory impairment, etc., lower doses would presumably be less likely to interfere with the beneficial effects of exposure therapy.

Although often used clinically, one type of exposure therapy that has received little attention in the literature on interactions of anxiolytics with behavior therapy is systematic desensitization. Systematic desensitization is characterized by the use of relaxation techniques in combination with gradual exposure in imagination, followed by real life exposure (Craske, 1999; Wolpe, 1958). Systematic desensitization is recommended as a non-pharmacological therapy for patients who cannot cope with dental treatment due to extreme fear (Milgrom, Weinstein, & Getz, 1995).

The current study examined the influence of two doses of alprazolam on systematic desensitization therapy for dental injection phobia. Specific phobia is a common problem in dentistry that exacerbates dental disease through avoidance of care and contributes to the increasing societal costs of achieving and maintaining dental health (Milgrom et al., 1995). Two

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