

# Alprazolam had short term anxiolytic effectiveness but increased physiological activation in flight phobia

Wilhelm FH, Roth WT. *Acute and delayed effects of alprazolam on flight phobics during exposure. Behav Res Ther* 1997 Sep;35:831-41.

## Objective

To determine the acute and delayed effectiveness of alprazolam in people with flight phobia.

## Design

Randomised controlled trial.

## Setting

Two 15 minute flights from 2 international airports in California, USA.

## Patients

28 patients who met the *Diagnostic and Statistical Manual of Mental Disorders, 3rd edition, revised (DSM-III-R)* criteria of a flying phobia (mean age 40 y, mean duration of flying phobia 15 y) were recruited through newspaper advertisements. Exclusion criteria were current major depression or dysthymia, cardiac or respiratory disease, or current psychoactive medication or medication affecting the cardiovascular system. 15 people who had no flying fears were selected as control patients.

## Intervention

Phobic patients were stratified by age and phobia severity and allocated to 1 mg of alprazolam (n=14) or placebo (n=14) about 1.5 hours before the first flight. Patients were then driven to either of the 2 airports and had a short flight (approximately 12 min) in a commercial airline 20 seat turbo prop aeroplane. Patients repeated the flight 1 week later with no medication. All patients received a 10 page booklet about flying phobia and the rationale for exposure therapy.

## Main outcome measures

Physiological data were recorded at baseline and during flights, and included heart rate, respiration, skin conductance, finger temperature, and body movement. Patient self

reported measures were obtained at baseline, 3 minutes after take off, and after the flight, and included anxiety, excitement, tension, and desire to leave the situation as measured by the Subjective Units of Distress Scale (SUDS). Patients also completed a questionnaire on 13 symptoms that meet *DSM-III-R* criteria for a panic attack plus muscle tension, need to move bowels, and need to urinate.

## Main results

During flight 1, patients who received alprazolam compared with patients who received placebo had less self reported anxiety (SUDS score 5.0 v 7.4) and fewer panic attack symptoms (5.3 v 8.6) but higher heart rate (114 v 105 beats/min) and respiration rate (22.7 v 18.3 breaths/min). From flight 1 to flight 2, panic attacks increased in patients who had received alprazolam (7% to 71%,  $p < 0.005$ ); no significant change occurred among placebo group patients (43% to 29%,  $p > 0.6$ ). For the 13 symptoms meeting *DSM-III-R* panic attack criteria, symptoms generally decreased between flights 1 and 2 in the placebo group and increased in the alprazolam group. Change scores were higher ( $p < 0.05$ ) in the alprazolam group for 7 symptoms: heart pounding or racing; shortness of breath; sweating; fear of dying; dizziness, unsteadiness, or faintness; choking; and fear of going crazy or losing control.

## Conclusions

People with flight phobia who received alprazolam reported acutely reduced anxiety but their physiological signs (heart and respiration rate) were increased. Alprazolam did not maintain anxiolytic effectiveness whereas placebo did.

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## Commentary

Panic and phobic disorders, including flight phobia, are among the most common mental disorders.<sup>1</sup> Systematic reviews of panic and phobic disorders suggest that cognitive behaviour therapy (CBT) with exposure in vivo is effective and the gains are maintained over time.<sup>2-4</sup> Medications are effective, but relapse is common on their discontinuation. Combined treatment with antidepressants and exposure in vivo may be the most potent short term treatment of panic disorder. Unfortunately, CBT is often not available and antidepressants take time to have an effect and can have unpleasant or hazardous side effects. Consequently, clinicians often prescribe benzodiazepines when the patient needs immediate relief of symptoms such as flight phobia. This study by Wilhelm and Roth provides

important information about the costs and benefits of such treatment.

Some methodological issues about this study should be considered. Firstly, although blinding was attempted, the participants and experimenters could often guess which drug had been given. Such bias typically leads to an over estimation of the treatment effect for the experimental treatment. Secondly, the duration of the plane flight was short (approximately 12 min) and shorter than usual for exposure in vivo.<sup>5</sup> If the participants did not receive adequate exposure in vivo, then most of the treatment effect would be attributable to the medication. It seems likely that these 2 factors would increase the apparent benefit of alprazolam compared with placebo.

This study suggests that the pragmatic decision to prescribe a benzodiazepine

for flight phobia may be of small benefit in the short term and of no benefit in the long term. The preferred treatment for flight phobia is CBT, which should incorporate exposure in vivo.

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