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Effects of Prazosin on Nightmares in Adults with Posttraumatic Stress Disorder

Laurie A. Tefft

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University of North Dakota

Abstract

The Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association [APA], 2000) estimates that in the United States, Posttraumatic Stress Disorder (PTSD) affects 8% of adults at some point during their life. Nightmares have a severe impact and can cause great distress for individuals with PTSD (Ohayon & Shapiro, 2000). Spoormaker and Montgomery (2008) suggested that sleep problems may be more of a risk factor for PTSD then a symptom of the disorder. Either way, it is evident that sleep needs to be addressed in those with this diagnosis. Posttraumatic nightmares are seldom the topic of PTSD studies utilizing medication management (Spoormaker & Montgomery) even though the rates of this symptom can be high. According to Friedman (2002), the use of psychiatric medication has shown minimal positive results in improving sleep issues. It has been suggested that prazosin may be beneficial in decreasing posttraumatic nightmares (VA, 2010). A literature review was completed to determine the effectiveness prazosin had on decreasing posttraumatic nightmares compared to a placebo, no medication, or psychotropic medications. Other studies including qualitative research were incorporated to show other responses related to the medication. These studies all shared results indicating that prazosin is effective at decreasing the quantity and intensity of nightmares in the adult populations studied. This information was disseminated through a presentation to mental health staff on an inpatient psychiatric unit. Discussion and review allowed for feedback from the staff. They gave examples of cases they've experienced and agreed that prazosin can be a useful medication in the treatment of posttraumatic nightmares.

Introduction

The Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association [APA], 2000) estimates that in the United States, Posttraumatic Stress Disorder (PTSD) affects 8% of adults at some point during their life. PTSD is defined as "characteristic symptoms following exposure to an extreme traumatic stressor" (APA, p. 463). These stressors can include physical and sexual abuse or attacks, military warfare, disasters, terrorism, injury, and death, and the symptoms can include flashbacks, nightmares, avoidance of situations or stimuli, and heightened awareness of the environment. The focus in this discussion is on nightmares because of the distress and severe impact they can cause for people with PTSD (Ohayon & Shapiro, 2000). Spoormaker and Montgomery (2008) suggested that sleep problems may be more of a risk factor for PTSD then a symptom of the disorder. Either way, it is obvious that sleep needs to be addressed in those with this diagnosis.

The prevalence of nightmares or distressing dreams and PTSD varies based on the population of study. Sixty-seven percent of Vietnam veterans with PTSD had nightmares (Holowka, Marx, Kaloupek, & Keane, 2012). A study focused on PTSD in the general population showed a 72% prevalence of nightmares among its individuals (Leskin, Woodward, Young, & Sheikh, 2002). The lifetime prevalence of PTSD and a comorbid psychiatric diagnosis was 88% in males and 79% in females (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Up to 96% of individuals with PTSD and a comorbid disorder experienced nightmares (Leskin et al.). It has been suggested that prazosin may be beneficial in decreasing posttraumatic nightmares (VA, 2010).

Purpose

The purpose of this project is to determine the effects that prazosin has on nightmares in individuals with a diagnosis of PTSD. Nightmares are seldom a topic in health education (Stores & Crawford, 1998). They are viewed as secondary to PTSD, and it is rare that sleep disturbances are monitored and treated after PTSD has resolved (Spoormaker & Montgomery, 2008). The psychotropic medications considered first-line agents to treat this mental illness have not been shown to be effective in treating posttraumatic nightmares (Davidson, Rothbaum, van der Kolk, Sikes, & Farfel, 2001; Meltzer-Brody, Connor, Churchill, & Davidson, 2000). It is important to find medications that have evidence based efficacy that practitioners can have confidence in prescribing.

The utilization of more effective medication management methods can help increase the quality of life that those with PTSD experience, and it can reduce the number of nightmares and the number of people who deal with posttraumatic nightmares. After a literature review was conducted, a presentation (See Appendix) focused on this topic was presented to professionals in the psychiatric field.

Significance

Almost three quarters of the civilian population with PTSD and 96% of individuals with PTSD and a comorbidity experienced nightmares (Leskin et al., 2002). In a study by Davis, Byrd, Rhudy, and Wright, (2007) it was reported that individuals can experience distressing dreams multiple times in a week or night, and the nightmares can lead to an increase in distress related to "global sleep quality" and a dread of falling asleep. Nightmares can cause repeated awakenings throughout the night or avoidance of sleep, and this can lead to "excessive

sleepiness, poor concentration, depression, anxiety, or irritability that can disrupt daytime functioning" (APA, 2000, p. 631).

Many people with this diagnosis experience distressing dreams and they can occur quite frequently, but only 14 controlled trials with placebos have been conducted considering the use of medications on sleep symptoms of PTSD (Spoormaker & Montgomery, 2008). Selective serotonin reuptake inhibitors (SSRIs) are considered first line treatments for PTSD, but they have been shown to cause problems with sleep and have little to no benefits for nightmares (Friedman, 2002; Davidson et al., 2001; Meltzer-Brody et al., 2000). Prazosin has shown potential in aiding the relief from posttraumatic nightmares (Crenshaw, 2010).

Individuals with posttraumatic nightmares may seek treatment and care through primary physicians and psychiatric physicians and practitioners. Those that will be most impacted by this information are practitioners in psychiatry, general medicine, and public health in both acute and outpatient settings. Reviewing the literature has led to insight about the promise behind the use of prazosin on treating posttraumatic nightmares. This information is useful for clinical practice where clients are seeking care for their symptoms of PTSD.

Theoretical Framework

The Roy Adaptation Model was used for this project to help guide and understand the topic of study. Understanding adaptation to stimuli in a person's life can help understand how to deal with and treat these stressors or stimuli. Individuals diagnosed with PTSD are considered by Roy and Andrews (1999) to be adaptive systems. The stimuli have an effect on the individual's life. The influence of stimuli leads to an attempt to adapt. The adaptive response which includes innate and acquired mechanisms is viewed as effective or dysfunctional. If the change is not in a positive direction and the adaptation is not effective, an active examination by

the nurse to recognize, understand, and respond to human coping processes should be completed (Roy & Andrews, 1999). To help the individual, the nurse should also perform an assessment of behaviors and influencing factors, determine a nursing diagnosis, perform goal setting, determine an intervention, and complete an evaluation (Roy, 1984). Goals of the Roy Adaptation Model include increasing effective adaptation and reducing ineffective reactions (Roy, 1984). By using prazosin to treat posttraumatic nightmares, the nurse is responding to the ineffective coping the individual is experiencing.

The Roy Adaptation Model focuses on a holistic approach and emphasizes the biological, psychological, and social factors that can affect a person's response to traumatic events (Roy & Andrews, 1999). The four areas to be considered include physiologic needs, self-concept, role function, and interdependence (Roy & Roberts, 1981). The use of medication management for nightmares can be considered a form of managing the stimuli in a biological and physiologic manner.

Definitions

A few terms used throughout this paper will be defined in this section so the topic of discussion can be comprehensively understood.

PTSD

According to the DSM, PTSD is a mental disorder that involves an experience or contact with an extreme traumatic stressor that included possible death, injury, or a danger to self or others. The individual who experienced the traumatic event responds with extreme fear, helplessness, or horror. Criteria in the DSM include re-experiencing the trauma, avoiding stress or stimuli related to the trauma, and persistent increased arousal. To be diagnosed with PTSD,

symptoms are present for longer than one month, and the symptoms cause social and occupational impairment or severe distress in the person's life (APA, 2000).

Nightmare

Nightmare has been defined as "a frightening dream that usually awakens the sleeper" (Merriam-Webster, 2012). According to the Mayo Clinic (2011), nightmares are "disturbing dreams associated with negative feelings, such as anxiety or fear." Nightmares are also defined as "a bad dream that brings out strong feelings of fear, terror, distress, or anxiety" (MedlinePlus, 2012). During distressing dreams related to PTSD, the traumatic episode can be repeated or symbolized (APA, 2000).

Prazosin

Prazosin is an $alpha_1$ adrenergic receptor antagonist that is most often clinically used to treat hypertension. In adults the recommended initial dose for hypertension is one to two milligrams two to three times a day. The maintenance dose for hypertension is 6 to 15 mg/day over two or three divided doses. The suggested titration is 1mg. Due to its effect on blood pressure, it is recommended to give this medication at bed time to decrease the risk of orthostatic hypotension (Wynne, Moser Woo, & Olyaei, 2011).

Adult

The DSM acknowledges that PTSD can affect individuals of all ages (APA, 2000). It is important to recognize differences between children and adolescents compared to adults, so the population of interest in this project is adults age 18 years and older.

Review of the Literature

Although there are FDA approved first-line treatments for PTSD, there are not medications specifically designed for PTSD and nightmares (Friedman, 2002). It is important to

explore other options outside of SSRIs in treating distressing dreams, because they can have such an impact on a person's life.

There is an increasing amount of literature focused on the use of prazosin to treat posttraumatic nightmares. The literature is expanding and includes qualitative, retrospective, open trials, and randomized controlled trials (RCTs). By reviewing past studies, a recommendation on the use of prazosin for adults diagnosed with PTSD experiencing nightmares can be developed.

Five articles that were reviewed are RCTs that compared prazosin to placebos (Germain, 2012; Raskind et al., 2003; Raskind et al., 2007 Taylor et al., 2008; van Liempt, 2012). One of these RCTs compared prazosin to a cognitive-behavioral treatment and a placebo (Germain). Four open-label clinical trials looked at the effectiveness of prazosin on nightmares (Peskind, Bonner, Hoff, & Raskind, 2003; Raskind et al., 2000; Taylor & Raskind, 2002; Thompson, Taylor, McFall, Barnes, & Raskind, 2008). Two qualitative (Gehrman & Harb, 2010; Johnson, & Rosen, 2013) and two retrospective chart reviews were found (Boynton, Bentley, Strachan, Barbato, & Raskind, 2009; Raskind et al., 2002). A retrospective chart review on comparing prazosin to quetiapine was also reviewed (Byers, Allison, Wendel, & Lee, 2010).

Prazosin was shown to be effective at decreasing nightmares in individuals diagnosed with PTSD who were veterans (Germain, 2012; Peskind et al., 2003; Raskind et al., 2000, Raskind et al., 2002; Raskind et al., 2003; Raskind et al., 2007; Thompson et al., 2008) and nonveterans (Gehrman & Harb, 2010; Johnson, & Rosen, 2013; Taylor et al., 2008; Peskind et al., 2003; Taylor & Raskind, 2002). All of the studies included males. Four studies specified female participants were involved in their studies (Gehrman & Harb, 2010; Raskind et al., 2007; Taylor et al. 2008; Taylor & Raskind, 2002). The number of female subjects was low in the

studies they did participate in. Raskind and colleagues (2007) had two female participants out of forty, and Byers and colleagues (2010) had 2% of the 237 participants that were females. One study was composed of 11 females out of 13 (Taylor et al.). One RCT that studied PTSD in veterans stated 26 white, 11 African-Americans, and one Asian-American, Hispanic, and Native American were involved in their study (Raskind et al., 2007). Boynton and associates (2009) stated their refugee subjects were from Afghanistan, Cambodia, Ethiopia, Gambia, Iraq, Kosovo, Somalia, and Vietnam.

Studies included various numbers of participants. The RCTs included ten male Vietnam combat veterans (Raskind et al., 2003), forty veterans from the Vietnam War, World War II, Korean War, Panama invasion, and Gulf War (Raskind et al., 2007), fifty veterans (Germain, 2012), and thirteen civilian individuals which included eleven females (Taylor et al., 2008). One open trial included four participants (Raskind et al., 2000). An open trial focused on prazosin's effects of posttraumatic nightmares in an elderly population had nine male participants that included World War II, Korean War, and World War II veterans. The ninth participant was a Holocaust concentration camp survivor (Peskind et al., 2003). The qualitative studies each had case illustrations that were based on one individual (Gehrman & Harb, 2010; Johnson, & Rosen, 2013). Twenty-three individuals were included in a retrospective chart review on refugees (Boynton et al., 2009). A placebo controlled study that included civilian participants had eighteen subjects initially, but two withdrew due to orthostatic hypotension with a 1mg initial test of the medication, one relocated, and two withdrew after deciding not to participate. Fifty-nine Vietnam and Gulf-war combat veterans were included in another retrospective chart review. Of the 59, only 36 completed an eight week treatment course of prazosin (Raskind et al., 2002). In the retrospective chart review that compared prazosin to quetiapine, a total of 237 participants

were included, with 62 who were administered prazosin, and 175 who were administered quietiapine (Byers, et al., 2010).

Average ages of the randomized controlled trials were 53 years (Raskind et al., 2003), 56 years (Raskind et al., 2007), 49 years (Taylor et al., 2008), and 41 years (Germain, 2012). The average age of veteran males in an open clinical trial was 57 years (Raskind et al., 2000). The refugees in the retrospective chart review had an average age of 30.3 years (Boynton et al., 2009), while another chart review on combat veterans had an average of 51 years (Raskind et al., 2002). The qualitative study involving the man who went to a nursing home was 86 years of age (Johnson, & Rosen, 2013), and another qualitative study stated the woman was in her "mid-50s" (Gehrman & Harb, 2010). The retrospective study comparing two medications had an average age of participants of 53 years for the quetiapine group and 54 for the prazosin group (Byers, et al., 2010).

All studies reviewed required that individuals be diagnosed with PTSD based on DSM criteria. In Taylor and colleagues' (2008) placebo controlled trial with civilian individuals, limitations included that the individuals were healthy and had no substance abuse issues for the three months prior to the study. Taylor and Raskind performed an open label trial in 2002 with civilians and Raskind and colleagues (2000) performed an open label trial with four combat veterans. In both of these, the subjects had not experienced substance or alcohol abuse six months prior to the study. Raskind and colleagues' (2003) RCT focused on ten Vietnam veterans, and they did not have alcohol or substance abuse for six months prior to the study. In the retrospective chart review on a refugee population, no individuals had been diagnosed with substance abuse or dependence (Boynton et al., 2009).

Of these studies, some discussed the comorbid psychiatric conditions the individuals with PTSD experienced (Boynton et al., 2009; Gehrman & Harb, 2010; Taylor et al., 2008, Thompson et al., 2008). An open-trial with nine elderly participants stated that all participants had more than one medical diagnosis. Some comorbidities listed included cerebrovascular disease, atrial fibrillation, hypertension, gout, congestive heart failure, osteoporosis, diabetes mellitus, gastroesophageal reflux disease, and hypothyroidism (Peskind et al., 2003). Raskind and colleagues (2007) excluded those with a prior diagnosis of schizophrenia, bipolar disorder, psychotic disorder, or depression with active suicidal thoughts. In some instances, participants continued psychotherapy during the study with prazosin (Raskind et al., 2007; Taylor et al. 2008; Thompson et al., 2008). Psychotropic medications were continued throughout some studies unchanged (Boynton et al. 2009; Byers et al., 2010; Peskind et al. 2003; Raskind et al., 2002; Raskind et al., 2003; Raskind et al., 2007; Taylor et al., 2008; Thompson et al., 2008). Medication differences were noted between the two groups who took prazosin and who took quetiapine. Fourteen percent fewer of those taking quetiapine were administered a sleep medication at baseline, and 80% of those taking quetiapine compared to 61% taking prazosin were on an SSRI at some point during the duration of study (Byers et al., 2010).

Posttraumatic stressors varied. In one RCT that was a double blind, crossover study, various past traumatic stressors included childhood sexual or physical abuse, adult assault, rape, and a life-threatening motor vehicle accident (Taylor et al., 2008). In other studies the stressor was combat and war (Raskind et al., 2000; Raskind et al., 2002; Raskind et al., 2003). In the retrospective chart review on a refugee population, stressors included observing war, witnessing murders of family, rape, torture, being a war hostage, and being captured by soldiers and then experiencing physical and sexual abuse (Boynton et al., 2009). The 86 year old man

transitioning to a nursing home was a Holocaust survivor (Johnson, & Rosen, 2013). The woman in the case illustration had experienced childhood sexual abuse (Gehrman & Harb, 2010). One article included the length of PTSD symptoms (Boynton et al.) while most did not address this.

Various dosing was found to be effective for participants. As low as 2 to 4mg/day decreased traumatic nightmares in elderly veterans (Peskind et al., 2003), and 2 to 6mg/day (Taylor et al., 2008) and 1 to 4mg/day (Taylor & Raskind, 2002) decreased nightmares in nonveterans. In the RCT comparing prazosin, cognitive-behavioral therapy, and a placebo, the participants had an average dose of 8.9mg/daily (Germain, 2012). Two of the participants in an open clinical trial with four veterans reached a dose of 5mg/day and the other two were restricted to 2mg/day due to issues with low blood pressure (Raskind et al., 2000). The elderly man who was the focus of one qualitative study took 1mg/day of prazosin (Johnson, & Rosen, 2013). The women in the qualitative case illustration took an ending dose of 9mg at bedtime (Gehrman & Harb, 2010). An average of 9.5 mg/day (Raskind et al., 2003), 9.6mg/day (Thompson et al., 2008), and 13mg/day of prazosin (Raskind et al., 2007) produced a reduction in nightmares in veterans with PTSD. In a refugee population an average dose of 2.3mg/day that ranged from one to six mg/day for participants was utilized (Boynton et al., 2009), and in a population of combat veterans, of the 36 who completed a week course of prazosin, the average dose was 9.6mg/day (Raskind et al., 2002). The comparison of prazosin versus quetiapine had various doses listed depending on the time of the study. After half a year of prazosin administration, the average dose was 3.2mg/day. At the end of the study the average was 6.3mg/day with a range of one to 25mg/day. Quetiapine dosing averaged 101mg/day at six months and 135mg/day at the end of the study. The range was from 25 to 600mg/day (Byers et al., 2010).

A couple of the RCTs were double blind crossover trials that lasted seven weeks (Taylor et al., 2008) and 20 weeks (Raskind et al., 2003). A RCT including randomization to a prazosin, therapy, or placebo group (Germain, 2012) and a RCT including randomization to prazosin, quetiapine, or placebo group lasted eight weeks (Byers et al., 2010). An open trial that had four veterans participate (Raskind et al., 2000) and two retrospective chart studies of refugees and combat veterans lasted an eight week period (Boynton et al., 2009; Raskind et al., 2002). Although only a week of prazosin use in an elderly man was discussed in a qualitative study, his nightmares stopped (Johnson, & Rosen, 2013).

To measure the outcomes prazosin had on traumatic nightmares, the Clinician Administered PTSD Scales (CAPS) Recurrent Distressing Dream was used (Boynton et al., 2009; Peskind et al., 2003; Raskind et al., 2000; Raskind et al., 2002; Raskind et al., 2003; Raskind et al., 2007; Taylor et al., 2008; Thompson et al., 2008). The CAPS PTSD nightmare item was also used (Germain, 2012; Raskind et al., 2003; Taylor & Raskind, 2002). The Clinical Global Impression of Improvement (CGI-I) was used in multiple studies to measure outcomes on nightmares (Boynton et al., 2009; Germain; Raskind et al., 2000; Raskind et al., 2002; Raskind et al., 2003; Taylor et al., 2008). In the qualitative studies the participants were asked about their number of nightmares. The female stated her nightmares decreased from nightly to one to two every week and the elderly male stated his ceased all together (Gehrman & Harb, 2010; Johnson & Rosen, 2013).

All of the studies discussed in this paper concluded that prazosin is effective at helping to treat posttraumatic nightmares. Prazosin and quetiapine had comparable success in decreasing nightmares in a short period of time. Byers and fellow researchers (2010) concluded that the prazosin had a higher probability to be continued until the end of the study when compared to

quetiapine. Some people continued it up to six years following the start of the study. They stated that the quetiapine participants who stopped taking the medication were more likely to discontinue it due to side effects or lack of efficacy. A decrease in the number of nightmares with both prazosin and cognitive-behavioral therapy were clinically significant and greater than that of placebo, but there was a decrease in all three groups over a period of time (Germain, 2012).

Methods

A literature search was performed to find studies related to the topic of this project. The search was completed through the University of North Dakota's Harley French Library website with the use of CINAHL, Cochrane Library, and PsychInfo. These were preferred due to the topic of interest being reviewed. The Cochrane Library and CINAHL provide highly regarded reviews, and PsychInfo provides studies with a focus on psychology (Mateo & Kirchhoff, 2009). Limitations included retrospective studies, randomized controlled trials, open trials, and qualitative studies that were published in English after 2000. The limitation on year was used because of the importance of current data.

The terms used in CINHAL's headings included PTSD or posttraumatic stress disorder, prazosin, and nightmares or distressing dreams. This returned seven studies for review. The years were not limited due to the available studies being completed in 2003 or later. Of the seven studies, three of the articles appeared to meet criteria for this topic.

The same terms were used in the medical subject heading on the Cochrane Library site. This resulted in three reviews of which one was a repeat and one appeared to match criteria. PsychInfo's thesaurus was used in an attempt to find search terms that matched the research question. The same terms were used as above. PsychInfo produced 33 search results from 2000

to the present. Thirteen articles were noted to be suitable for the research question. Of these appropriate articles, four were repeats from the previous search.

The references of the articles chosen were reviewed and one further article was found to be appropriate for the use of this study review. The others that did appear suitable were repeated results from the searches listed previously. The total number of research articles that appear to meet criteria is fourteen.

The data compiled here was presented to a group of staff who treat people with a diagnosis of PTSD that experience posttraumatic nightmares in a local inpatient setting. Individuals were given handouts bulleting the rationale for this study and the implications of it (See Appendix). After the information was distributed, there was time for discussion, questions, and recommendations for current treatment of posttraumatic nightmares on the unit.

Results

Following the presentation, the mental health professionals were asked for their feedback and thoughts related to the topic. These professionals had knowledge of prazosin and had administered it before. A couple of staff members shared patient successes with prazosin and also discussed and agreed that further research on dosing and diversity were necessary. All of these professionals had witnessed individuals have a decrease in the number and intensity of posttraumatic nightmares with the use of prazosin. Some had noted that in other cases they weren't able to witness effects and results due to the patient being discharged or due to side effects of orthostatic hypotension. Staff brought up a concern that providers did not dose prazosin high enough to be effective. They stated in some cases the medication was maxed at approximately 2mg even though side effects were not present. The participants of this presentation agreed that further research on dosing and diversity were necessary. They all

recognized the importance of assessing the effectiveness of prazosin on posttraumatic nightmares in those hospitalized on the inpatient psychiatric unit.

Discussion and Implications for Nursing

Posttraumatic nightmares are seldom the topic of PTSD studies utilizing medication management (Spoormaker & Montgomery, 2008) even though the rates of this symptom can be high. According to Friedman (2002), the use of psychiatric medication has shown minimal positive results in improving sleep issues. SSRIs and selective norepinephrine reuptake inhibitors are considered to be first-line medications for this disorder, but they can cause side effects such as sleep problems (Stahl, 2008). SSRIs such as sertraline lead to increased insomnia and sleep problems (Davidson, Rothbaum, van der Kolk, Sikes, & Farfel, 2001). Fluoxetine did not show better efficacy then a placebo on decreasing nightmares (Meltzer-Brody, Connor, Churchill, & Davidson, 2000). Cyproheptadine, an antihistamine, had mixed results. Two studies showed a benefit in decreasing nightmares, but another showed that it could worsen nightmares (Brophy, 1991; Jacobs-Rebhun et al., 2000; Rijnders, Laman, & Van Diujn, 2000). These medications are not relieving nightmares in those with PTSD at a high enough rate and at times they are causing further sleeping issues.

Due to the lack of effective medication that was previously thought to eliminate or diminish PTSD nightmares, it is important to review the studies on prazosin that have been completed. From the data provided by them, there is hope with this medication for those suffering from posttraumatic nightmares. Nursing can use this information to make a difference for those with distressing dreams.

The Roy Adaptation Model directs nurses to look at the changes occurring in an individual's life. If it is not in a therapeutic direction, an active examination needs to be

performed by the nurse. The nurse should try to understand and identify methods to treat maladaptive processes after they recognize the patient is in distress (Roy & Andrews, 1999). Nightmares need to be understood from the patient's point of view and an assessment of quality, duration, and number of nightmares needs to be determined so a baseline is developed for comparison. The nurse should also have an ability to assess the patient's previous attempts to treat posttraumatic nightmares.

It is at this point that nurses are then able to help the patient increase effective adaptation with the knowledge from the multiple research approaches discussed previously. These various approaches which include qualitative studies, open trials, retrospective chart reviews, and RCTs have shown that prazosin is effective in various groups at decreasing distressing dreams related to trauma. Due to this knowledge, it is apparent that the use of prazosin can be considered a method to assist the individual in increasing this effective adaptation.

Results show that nightmares decrease for many people diagnosed with PTSD who are prescribed prazosin. An issue that may come up related to prescribing this medication is dosing. There are various dosages throughout the studies and research that have been found to be effective for distressing dreams. This can lead to confusion for prescribing the medication. It is important to look at the methods that the studies have utilized in medication administration, but until further research is completed on the appropriate initial dosing and titration patterns for posttraumatic nightmares, it may be useful to follow the recommendations on prescribing for hypertension. An initial dose of 1mg/day is recommended, and it is suggested it then be titrated in small increments of 1mg, while monitoring for side effects such as orthostatic hypotension (Wynne et al. 2011). This is similar to many of the methods used throughout the studies discussed in the literature review section.

Further research is necessary to be able to generalize results to even more diverse populations. Veterans and nonveterans have been included in these studies, but few women are included as participants compared to the number of men. Many of the studies were performed in older populations, so young and middle aged adults may not have the same response that was shown in these participants. It is also important to assess the usefulness of prazosin in even younger patients such as children and adolescents since PTSD can affect individuals of all ages, including children (APA, 2000).

Two studies comparing prazosin to other treatment methods were found through the literature search. It is important to further the research that supports the use of prazosin compared to other medications and therapy to know if it should be considered a first line drug for treatment of posttraumatic nightmares. In the studies quetiapine was shown to be as effective as prazosin, but the discontinuation rates was higher for quetiapine due to side effects and perceived lack of efficacy (Byers et al., 2010). It is necessary to monitor individuals' reactions and side effects to the medication, especially as it is increased. Many of the studies point out that the side effects of prazosin are quite low and this is a reason it has such great potential in clinical practice. Nightmares returned in some people when the medication was discontinued (Raskind et al., 2003). It is necessary to educate patients on this so they realize that if they stop the prazosin, their nightmares may return.

Education needs to be provided on the use of prazosin and its helpfulness with posttraumatic nightmares. Inpatient and outpatient prescribing practitioners should be made aware of the results that have been found related to this medication's use. Clinical effectiveness will need to be considered for each individual.

Conclusion

PTSD is a prevalent problem in the psychiatric field. The number of individuals diagnosed with PTSD who experience nightmares is high. Nightmares can be recurrent and distressing to individuals. They can lead to dysfunction in daily living. Management of these distressing dreams can be difficult to target with current recommended medications for this diagnosis. The nightmares can persist even after first line medications treat the other symptoms of PTSD. Individuals can experience negative effects related to nightmares that can severely impact their lives.

Through multiple studies, prazosin was shown to decrease intensity and frequency of posttraumatic nightmares in various populations, including veterans, nonveterans, males, females, and elderly. Future research with an even more diverse population will determine if these results will be replicated in other groups. Nursing can help recognize the adaptations and stressors that influence PTSD nightmares and realize the need for an effective adaptive treatment to decrease stress. Every individual experiences symptoms in differing ways, but the prescribing of prazosin for adults with PTSD experiencing posttraumatic nightmares should be considered an important tool of treatment.

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Appendix

Prazosin Effects on Posttraumatic Nightmares
Laurie Tefft

Topic: In adults with PTSD, how does prazosin compare to a placebo, no medication, or a psychotropic in decreasing posttraumatic nightmares?

What is PTSD?

- A mental disorder that involves an experience or contact with an extreme traumatic stressor that included possible death, injury, or a danger to self or others.
- Individual responds with extreme fear, helplessness, or horror.
- Criteria include re-experiencing the trauma, avoiding stress or stimuli related to the trauma, and persistent increased arousal.
- Symptoms are present for longer than one month, and they cause social and occupational impairment or severe distress in the person's life (APA, 2000).

What is a nightmare?

- "A frightening dream that usually awakens the sleeper" (Merriam-Webster, 2012).
- "Disturbing dreams associated with negative feelings, such as anxiety or fear" (Mayo Clinic, 2011).
- "A bad dream that brings out strong feelings of fear, terror, distress, or anxiety" (MedlinePlus, 2012).
- The traumatic episode can be repeated or symbolized (APA, 2000).

What is Prazosin?

- An $alpha_1$ adrenergic receptor antagonist that is most often clinically used to treat hypertension.
- In adults the recommended initial dose for hypertension is one to two milligrams two to three times a day. (Wynne, Moser Woo, & Olyaei, 2011).

What is the importance of studying posttraumatic nightmares?

- PTSD affects 8% of adults at some point during their lives (APA, 2000).
- In the general population with PTSD, 72% of individuals experience nightmares (Leskin, Woodward, Young, & Sheikh, 2002).
- Up to 96% of individuals with PTSD and a comorbid disorder experienced nightmares (Leskin et al., 2002).
- First-line psychotropics used to treat PTSD have not been shown to be effective in treating posttraumatic nightmares (Davidson, Rothbaum, van der Kolk, Sikes, & Farfel, 2001; Meltzer-Brody, Connor, Churchill, & Davidson, 2000).
- There are no specific medications that target posttraumatic nightmares (Friedman, 2002).

What effects did prazosin have on nightmares?

- Through various study approaches, including randomized controlled trials, open trials, retrospective studies, and qualitative studies, various prazosin doses were shown to decrease the number of nightmares that individuals experienced. In some cases, prazosin eliminated nightmares completely for individuals.

What populations were studied?

- Combat veterans and nonveterans
- Males and females
- Refugees
- Elderly

What future research should be considered?

- Further research is necessary to be able to generalize results to even more diverse populations. Veterans and nonveterans have been included in these studies, but few women are included as participants compared to the number of men.
- Many studies were performed in older populations, so young and middle aged adults need to be the focus of future research. It is also important to assess the usefulness of prazosin in even younger patients such as children and adolescents since PTSD can affect individuals of all ages, including children (APA, 2000).
- Various dosages have been found to be effective to decrease nightmares. It may be useful to follow the recommendations on prescribing for hypertension until further research on suggested dosing ranges from posttraumtic nightmares is established. An initial dose of 1mg/day is recommended. It is suggested it then be titrated in small increments of 1mg, while monitoring for side effects such as orthostatic hypotension (Wynne et al. 2011).
- Two studies comparing prazosin to other treatment methods were found. It is important to further the research that supports the use of prazosin compared to other medications and therapy to know if it should be considered a first line drug for treatment of posttraumatic nightmares.

How can we use this information?

- Every individual experiences symptoms in differing ways, but the prescribing of prazosin for adults with PTSD experiencing posttraumatic nightmares should be considered an important tool of treatment.

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