Psychopharmacology in the Treatment of Posttraumatic Stress Disorder: A Comparative Literature Review

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Posttraumatic Stress Disorder (PTSD) is a debilitating mental disorder that is different from many other disorders in the DSM-V (American Psychiatric Association, 2013) in that it includes environmental exposure (Hoskins et al., 2021), experiencing a traumatic event. The mechanism behind the development of PTSD is still vastly unknown (Abdallah et al., 2018). However, it is becoming more apparent that multiple neurobiological systems are involved (Abdallah et al., 2018). Hallmark symptoms include avoidant behaviors, emotional numbing, hyperarousal, negative cognitions and mood, and intrusion symptoms, such as nightmares or flashbacks (APA, 2013; Martin et al., 2021). However, PTSD does not always act the same way in different people, making it a heterogeneous disorder (Albucher & Liberzon, 2002).

Not only are the symptoms and development theories heterogeneous, but the potential population is, too. While 70% of the global population has been exposed to trauma, only about 6-10% of this group develop PTSD (Abdallah et al., 2018; Yehuda et al., 2015). Particular populations are at a higher risk of developing the disorder, however. These individuals include first responders, military members, and abuse survivors (Yehuda et al., 2015). Of this population, 59% report having a severely impaired quality of life (Martin et al., 2021). They are also at a high risk of developing comorbid disorders, such as substance use disorder and depression, and maintain a higher suicide rate (Martin et al., 2021). The need for clinically effective pharmacological treatment is critical as counselors become over-taxed and waitlists grow longer. This paper explores the current literature and compares the arguments in the debate on the use of psychopharmacology in treating PTSD.

Literature Review

In Support

The Food and Drug Administration (FDA) currently approves two medications – sertraline and paroxetine – to treat PTSD (Jeffreys, Capehart, & Friedman, 2012). Jeffreys, Capehart, and Friedman (2012) support this position. However, they also found that while paroxetine and sertraline have the most substantial support, other medications show promise based on randomized controlled trials (RCTs) (Jeffreys, Capehart, & Friedman, 2012). Ultimately, due to patient preference or lack of accessible psychotherapy, they concluded that medications are vital in treating PTSD (Jeffreys, Capehart, & Friedman, 2012).

Dusi et al. (2015) found that antidepressants rebuild grey matter volume in their study. This finding is vital to the study of PTSD because the dominating theory behind the development of PTSD is that chronic or severe stress affects the grey matter volume in various parts of a person's brain (Abdallah et al., 2018). Though the study was regarding depression, the implications for SSRI treatment in PTSD still stand and support their use.

Albucher and Liberzon (2002) found clear evidence that antidepressants alleviate the symptoms of PTSD and facilitate remission. Their review looked at studies on pharmacotherapy from 1966 through 2001. Among the classes of antidepressants they studied, they recommend using SSRIs over others because of the positive results from large RCTs, and they are easier to use, have low overdose risk, and seemingly have fewer side effects than previous antidepressants (Albucher & Liberzon, 2002).

Another angle supporting pharmacotherapy is using it in conjunction with an established trauma-focused psychotherapy intervention, such as in the review by de Kleine, Rothbaum, and van Minnen (2013). They found that cognitive enhancers during prolonged exposure therapy had

minimal side effects and augmented the session (de Kleine, Rothbaum, & van Missen, 2013). Unfortunately, while it is a promising field, they did not find enough research to determine the full efficacy of the treatment (de Kleine, Rothbaum, & van Missen, 2013).

Not Supporting

The literature against using pharmacotherapy when treating PTSD is more recent and ever-growing. Common criticisms throughout are small to moderate effect sizes, relatively small trial sizes, a lack of consensus for outcomes, and failure to replicate results. For example, Akiki and Abdallah (2018) found that many studies they reviewed suggested a nonspecific class effect due to their lack of consensus. They also had other practical concerns regarding side effects profiles and that certain groups of people have been found to respond less to paroxetine, removing it from the FDA's already tiny list of approved treatments. Their recommendation is to consider trauma-focused psychotherapy as it is at least as effective as the currently approved pharmacotherapies and has fewer side effects (Akiki & Abdullah, 2018).

Kelmendi et al. (2016) found that current approved first-line pharmacotherapy treatments have suboptimal response rates. They report that paroxetine and sertraline consistently produce a response rate of less than 60% and that more than 70% of patients never achieve clinical remission (Kelmendi et al., 2016). They also report that these drugs performed little better than placebo in many recent studies (Kelmendi et al., 2016). If a doctor must prescribe, they recommend doing so for the most distressing symptom cluster. Future research recommendations include targeting fear extinction systems and exploring the enhancement of exposure-based psychotherapies (Kelmendi et al., 2016).

Most recently, Hoskins et al. (2021) explored the various pharmacological approaches used to treat PTSD and found that most of the effect sizes in the studies to support these

approaches were small, and any clinical relevance was unclear. They also found confusion and inconsistencies across the various guidelines worldwide (similar to Martin et al., 2021). They also postulated that while trauma-focused psychotherapy is the recommended first-line treatment, there are many places in the world without access to it. These people require some type of medical support. They recommend augmenting a medication with another medication if psychotherapy is out of the question.

The results of another study by Abdallah et al. (2018) directly contradict Albucher and Liberzon's (2002) and Dusi et al. (2015). Abdallah et al. (2018) found that slow-acting SSRIs have minimal or inconsistent efficacy in treating PTSD or synaptic remodeling. They recommend further research on rapid-acting antidepressants for synaptic remodeling. They also explore the possibility of pharmacology augmenting psychotherapy.

Conclusion

Much work is left to be done to discover the mechanism behind the development of PTSD. Until that breakthrough, RCT-proven pharmacotherapies to treat PTSD remain an ever-present need. However, the heterogeneity of PTSD makes pharmacological monotherapy difficult, at best. It would be exceptional to see medications specifically designed to work against the possible neurobiological mechanism believed to be present in PTSD.

Trauma-focused psychotherapy remains the predominantly recommended first-line treatment with the highest outcome results, as the majority of the newer studies are finding less support for the efficacy of pharmacology as a first-line treatment for PTSD. However, it may be short-sighted to dismiss the use of pharmacotherapy in treating PTSD altogether. In the future, it would be beneficial to have more studies look at utilizing both trauma-focused psychotherapy and psychotropic medications, such as the de Kleine, Rothbaum, and van Minnen (2013) review.

Comparing those long-term outcome results to other studies using the same medications or therapies would likely finalize the debate regarding the role of pharmacotherapy in treating PTSD.

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