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This project was supported by a grant from the VA South Central Mental Illness Research Education and Clinical Center.

MEDICATION MANAGEMENT OF POSTTRAUMATIC STRESS DISORDER (PTSD) IN VETERANS WITH MILD TRAUMATIC BRAIN INJURY (mTBI)

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Editor: Ali Abbas Asghar-Ali, MD

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TABLE 1: POSTTRAUMATIC STRESS DISORDER (PTSD) - TRAUMA-MNEMONIC

T–TRAUMATIC EVENT EXPOSURE (required) Death, threatened death, and actual or threatened serious injury or sexual violence, by following ways:	**1.** Direct exposure; **2.** Witnessing the trauma; **3.** Learning of exposure to trauma of a close friend or relative; **4.** Indirect exposure during professional duties (e.g., first responders, medics);
R- RE-EXPERIENCING 1 required	**1.** Intrusive thoughts, **2.** Nightmares, **3.** Flashbacks, **4.** Emotional distress after exposure to traumatic reminders, **5.** Physical reactivity after exposure to traumatic reminders;
A-AROUSAL 2 required	**1.** Irritability or aggression, **2.** Risky or destructive behavior, **3.** Hypervigilance, **4.** Heightened startle reaction, **5.** Difficulty concentration, **6.** Difficulty sleeping;
U- UNABLE to Function	Significant distress or functional impairment, and are not due to medication, substance use, or other illness;
M-MONTH	Symptoms last more than 1 month;
A-AVOIDANCE 1 required	**1.** Trauma -related thoughts or feelings, **2.** Trauma-related reminders; and
NEGATIVE THOUGHTS OR FEELINGS 2 required	**1.** Inability to recall trauma, **2.** Overly negative thoughts about self or world, **3.** Exaggerated blame of self or others, **4.** Negative affect, **5.** Decreased interest in activities, **6.** Feeling isolated, **7.** Difficulty experiencing positive affect.

TABLE 2: MILD TRAUMATIC BRAIN INJURY (mTBI)

1. **Headache**, 2. **Dizziness**, 3. **Fatigue**, 4. **Irritability**, 5. **Insomnia**, 6. **Poor concentration**, 7. Memory difficulty, and 8. Intolerance of stress, emotion, or alcohol. • Persistent symptoms (>3 mos) are considered multifactorial. • PTSD medications may complicate mTBI symptoms in **bold**.

TREATMENT OF PTSD: • Educate about effective treatment options and collaborative care interventions that facilitate active engagement. • Use PTSD Checklist (PCL-5) in the initial assessment and to monitor progress. • Recommend and refer for EBP over pharmacologic treatment of PTSD. • Start pharmacotherapy when individual EBP is not readily available or not preferred. • Assess co-occurring sleep disturbances. • Recommend Sleep Hygiene and/or CBT for Insomnia unless severe sleep deprivation warrants immediate use of medication to prevent harm.

TABLE 3: PHARMACOTHERAPY FOR PTSD WITH COMORBID mTBI

MEDICATION	INITIAL DOSE	DOSE RANGE	CLINICAL CONSIDERATIONS
MONOTHERAPY			• Start low, go slow. • Use: prazosin – nightmares; trazodone/ mirtazapine – insomnia; buspirone/ hydroxyzine - anxiety; bupropion - lack of motivation or concentration. • Stimulants are not recommended for mTBI and can worsen **arousal** symptoms of PTSD. • Combining TCAs with other serotonergic agents (SSRIs, SNRIs, trazodone, triptans) can precipitate **serotonin syndrome**. • High dose trazodone or hydroxyzine can worsen **fatigue and/or concentration**. • Titrate prazosin slowly; can cause **dizziness**. • Bupropion increases risk of **seizure**. • Antidepressants and stimulants can precipitate **mania** in bipolar disorder. • VA/DoD evidence-based guidelines recommend against benzodiazepines. • Caution is advised for use of medications in pregnancy and lactation. • **Side Effects of SSRIs & SNRIs**: Nausea, headache, diarrhea, anxiety, nervousness, sexual dysfunction, agitation, dizziness, and hyponatremia or SIADH. High dosage of venlafaxine can increase blood pressure.
Sertraline*+	25-50 mg daily	50-200 mg daily	
Paroxetine*+	10-20 mg daily	20-50 mg daily	
Fluoxetine+	10-20 mg daily	20-80 mg daily	
Venlafaxine^	SA (XR):37.5 mg daily	SA (XR): 75-225 mg daily	
AUGMENTATION±			
Prazosin	1 mg bedtime	1-15 mg bedtime	
Trazodone	25-50 mg bedtime	50-100 mg bedtime	
Mirtazapine	7.5-15 mg bedtime	15-45 mg bedtime	
Buspirone	5 mg BID	30-60 mg in 2 or 3 divided doses	
Hydroxyzine	25 mg 1-4 times a day PRN anxiety	50-100 mg 1-4 times a day PRN anxiety	
Bupropion	150 mg daily	IR: 150-450 mg in 2 or 3 divided doses SR: 150 mg BID XR: 300 mg daily	

* FDA Approved; ± If no or partial response at maximum dose for 6 weeks, consider switch or augmentation; + SSRI; ^ SNRI

Abbreviations: EBP: evidence based psychotherapy; CBT: cognitive behavioral therapy; IR: immediate release; SR: sustained release; XR: extended release; SSRIs: selective serotonin reuptake inhibitors; SNRIs: serotonin-norepinephrine reuptake inhibitors; TCAs: tricyclic antidepressants.