Chapter 10

PSYCHIATRIC MEDICATIONS IN MILITARY OPERATIONS

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A portion of this chapter has been published as: Benedek DM, Schneider BJ, Bradley JC. Psychiatric medications for deployment: an update. *Mil Med*. 2007;172:681–685.

INTRODUCTION

Until the mid-1990s, psychotropic medication use for the treatment of ongoing mental disorders during combat operations was uncommon. Stimulants and other psychotropic medications were used, at times, to enhance the vigilance and performance of fatigued service members. However, in the mid-1990s the introduction of medications with more favorable side-effect profiles—particularly the selective serotonin reuptake inhibitors (SSRIs)—revolutionized the role of medications in the practice of military operational psychiatry. The widespread incorporation of these medications into civilian and military garrison psychiatric practice has resulted in an evolution in operational practice such that medication use in combat operations now focuses on the capacity for soldiers with symptoms of psychiatric illness to return to their premorbid level of functioning, rather than on efforts to "enhance" baseline performance.

Before the current conflicts in Iraq and Afghanistan, recent experiences either predated the current usage patterns of medications in psychiatric care, or were limited in duration (the Persian Gulf War) or scope (Bosnia, Kosovo, Somalia), so that few service members were affected. As a result, comprehensive experience and doctrine for the use of psychotropic medications consistent with current practice patterns in psychiatry were not feasible. This chapter will focus on the use of psychotropic medications during deployment. An overview of the history of the usage of medications will highlight the doctrinal evolution. Current practice guidance will be outlined and as yet unresolved questions addressed.

HISTORY OF PSYCHOTROPIC MEDICATION USE IN DEPLOYMENT

The ancient Assyrians, Egyptians, and Greeks reportedly used opiates before and during battles to sustain or enhance bravery and courage.[1] Other drugs studied or used to enhance combat performance include ergot alkaloids, cannabis, amphetamines, and other stimulants; Dramamine (McNeil-PPC Inc, Morris Plains, NJ) and other antihistamines; benzodiazepines; and L-tryptophan.[1] The most extensive modern use of performance-enhancing drugs occurred during World War II by German, Japanese, and English soldiers.[2] Amphetamines were noted to be useful not only to stave off fatigue and drowsiness but also to improve memory, concentration, physical strength, and endurance.[3–5]

During the Vietnam conflict, methylphenidate (Ritalin [Novartis AG, Basel, Switzerland]) and sometimes dextroamphetamine (Dexedrine [GlaxoSmithKline, Philadelphia, Pa]) were standard-issue drugs carried by long-range reconnaissance patrol soldiers, who reported the drugs' usefulness when they developed fatigue at the end of missions and had to return rapidly to base camp. Mild rebound depression and fatigue after discontinuation were the only reported adverse effects.[1] Sedatives were also explored as a method to improve performance in anxiety-producing situations, such as paratroopers making low-altitude jumps, or to reduce the emotional tension of young soldiers when guns were fired.[6]

Although the concept of using medications for performance enhancement remains an area of ongoing research, the documented usage of psychotropic medications to treat symptoms associated with current psychiatric diagnoses in soldiers actively involved in combat is limited. In earlier conflicts, limited experience using psychotropic medications to treat anxiety symptoms has been reported. These conditions have been treated with sedatives ranging from chloral hydrate and bromides in World War I to barbiturates in World War II and self-prescribed alcohol, cannabis, and heroin in Vietnam.[1] However, discussions of usage commented mostly on the medications' unwanted side effects, such as sedation, and the concern that their usage would lead to the fixation of a sickness role suggested by taking medication.

In 1978 Datel and Johnson[7] reviewed the usage of psychotropic medications by physicians deployed to Vietnam in 1967. They surveyed a group of mostly primary care physicians about how they prescribed 28 different psychotropic medications, including "major tranquilizers," "minor tranquilizers," antidepressants, stimulants, and sedatives for a 30-day period during the summer of that year. The most commonly utilized "psychotropic medication" was Compazine (GlaxoSmithKline) for gastroenteritis, and anxiety and insomnia were the most frequent mental health reasons for prescribing medications. Minor tranquilizers such as Equanil (Wyeth, Madison, NJ); Librium (Hoffman-LaRoche Inc, Nutley, NJ); Valium (Hoffman-LaRoche Inc); and Vistaril (Pfizer Inc, New York, NY) were most frequently prescribed for symptoms of anxiety, with Librium accounting for the majority of prescriptions (65%) and Thorazine (GlaxoSmithKline) accounting for most of the major tranquilizer prescriptions (86%). The authors noted that a "surprisingly low frequency" of depression was an indication for the usage of psychotropic medications. In general, the drugs that were utilized were perceived by the prescribing physicians as being quite efficacious.[7] Six medications (Prolixin [Bristol-Myers Squibb, Princeton, NJ];

Vesprin [Bristol-Myers Squibb]; Nardil [Pfizer]; Parnate [GlaxoSmithKline], Taractan [Hoffman-LaRoche Inc]; and desipramine) were not prescribed by any of the reporting physicians.

The first Israeli reports of operational use of tricyclic antidepressants in combat soldiers occurred during the 1982 war with Lebanon. Belenky noted that in 1973 the Israelis created a policy prohibiting forward use of medications and even hypnosis, expressing concern about the potential effect of this policy on battle fatigue return-to-duty rates.[8,9] Belenky advocated for longer-term military treatment facilities in theater, but cautioned against placing soldiers on psychotropic medications in forward deployed areas because of the possibility of side effects that might interfere with psychomotor performance or impair judgment in dangerous situations. He also noted potential medical risks from side effects in the field environment and problems with resupply.[8]

No reports have been published on the utilization rates or rationale for usage of psychotropic medications during the Persian Gulf War (1991), possibly because of the lack of prolonged combat exposure, or possibly because the military stress control doctrine at the time emphasized triage and normalization, discussing the use of psychotropic medications only in emergency situations. Staudenmeier and Bacon[10] reviewed the history and role of combat stress units during deployments and noted that one unit, the 528th, conducted 514 psychiatric evaluations during the Persian Gulf War. Of those evaluated, 24% were held for treatment and 3.5% were evacuated. Although this information demonstrated that combat stress units were being utilized, no data were given on the usage of medications among service members identified for treatment or evacuation.[10]

Ritchie[11] described a decision-making process for choosing which psychotropic medications to bring and use in Somalia during Operation Restore Hope (1993). Ritchie recommended considering two broad categories: emergency and maintenance medications. The former group included benzodiazepines (diazepam and lorazepam) and neuroleptics (haloperidol). The latter included antidepressants ("one tricyclic antidepressant and one SSRI"); anxiolytics (buspirone, benzodiazepines, or antidepressants); and sedatives (temazepam, triazolam, and trazodone). The rationale for bringing just one tricyclic antidepressant and one SSRI mirrored clinical practice at the time, which suggested that patients being treated by one antidepressant could be switched to another with little problem. Subsequently, practitioners have recognized that frequently patients only respond to a particular antidepressant or have side effects with one SSRI but not another. Ritchie recommended that medications such as lithium, carbamazepine, valproic acid, and all monoamine oxidase inhibitors be avoided during deployment because of problems with safety and monitoring.[11]

Pincus and Benedek[12] summarized the integrated use of combat stress detachments and division mental health (DMH) assets during Operation Joint Endeavor in Bosnia during 1995. The article does not specifically discuss medication usage in detail, but it considered the mission, a year-long peacekeeping operation, as more similar to the practice of garrison mental health than to other deployment environments.[12] Garrison mental health in 1995 typically consisted of a DMH team providing routine outpatient mental healthcare, including using psychotropic medications as indicated for the treatment of disorders seen in routine outpatient clinics. This practice suggests that mental health assets deployed during Operation Joint Endeavor utilized psychotropic medications routinely during the more than 3,000 outpatient contacts made over the year-long deployment. The authors acknowledged use consistent with garrison psychiatric practice in subsequent descriptions of their deployments.[12]

Warner et al[13] reviewed the utilization of one DMH activity during deployment to Operation Iraqi Freedom (OIF) in 2005. The authors noted 5,542 clinical contacts, of which 29.8% were for psychiatric mental disorders and the other 70.2% were for combat operational stress reactions. The top two psychiatric mental disorders in theater were generalized anxiety disorder (42.4%) and major depressive disorder (33.4%). The authors defined a "mature theater" as permitting the ongoing management of psychiatric disorders with psychotropic medications, although personnel were generally restricted to the use of SSRIs and mild hypnotics in theater. The article did not report rates of how many soldiers were prescribed or took the medications in theater; however, the account demonstrated the incorporation of practice patterns established in more recent peacekeeping operations (Bosnia) into psychiatric practice in the combat environment, with service members receiving treatment for ongoing mental health issues beyond the scope of combat operational stress.[13]

In July 2007, Schneider, Bradley, and Benedek[14] revisited the question of a rationale for choosing a psychotropic formulary for military operations. Recommendations were based on a combined 18 months of experience by the authors as psychiatrists deployed with combat stress control detachments during the first and third rotations to Iraq. The authors discussed the evolution of treatment of combat operational stress casualties from triage and nonpharmacologic, treatment-forward psychiatry principles to a role more consistent with contemporary outpatient psychiatric practices, noting

some caveats related to environmental and operational concerns. From their perspective, the nature of combat had changed. The idea that soldiers could be removed from the front lines and treated in the rear echelons no longer worked, because no true rear echelons exist in Iraq. It was now important to treat some mood and anxiety disorders as far forward as possible.[14]

Schneider and colleagues also noted that the increased dependence on National Guard and Reserve soldiers meant that the Army was receiving personnel who were treated according to civilian community standards rather than military readiness standards concerning prescriptions for SSRIs, atypical antidepressants, and antianxiety medications. This resulted in an increased requirement for available medications in theater. They suggested that most routine outpatient psychiatric conditions might be managed with medications and therapy in the combat zone, with the caveat of factoring in the "limitations inherent in the operational environment,"[14(p685)] such as military occupation, travel limitations for follow-up, and the restricted ability to educate the soldier and command about the medications' potential risks, benefits, side effects, and possible effect on mission requirements. They proposed a psychotropic formulary of at least 24 medications under the categories of antidepressants/antianxiety medications, benzodiazepines, antipsychotics/antimanics, sleep medications, adrenergic agents, and attention deficit hyperactivity disorder medications (Table 10-1).[14]

The level of comfort with the use of psychotropic medications in combat has mirrored trends in the larger US society. The change in psychotropic medication use from the last major extended US conflict (Vietnam) to current operations in Afghanistan and Iraq is well illustrated by a comparison between Datel and Johnson's questionnaire and the recent recommended psychotropic formulary for OIF by Schneider, Bradley, and Benedek. The only medications common to both documents are Ritalin and Dexedrine.[7,14]

DOCTRINE AND POLICY

US Army doctrine on the use of psychotropic medication has evolved significantly in the last 20 years. The initial Army field manual (FM) on combat stress control, *Combat Stress Control in a Theater of Operations* (FM 8-51),[15] published in 1994 and updated in 1998, focused on triage and nonpharmacologic interventions aimed at normalizing and minimizing combat stress. Little guidance was provided on the role and usage of psychotropic medications. The word "medication" occurs 25 times in this document, which contains 9 chapters. Most of these references discuss the use of medications in emergency situations when medication might be needed to calm an agitated service member. Chapter 3, section 8, states that "medication is prescribed sparingly and only when needed to temporarily support sleep or manage disruptive symptoms."[15(p3-8)] Chapter 6, section 3, discusses how to manage a service member who deploys after having been "diagnosed with psychiatric disorders by a civilian physician," advising the clinician as follows:

> These soldiers may hide the fact that they are taking psychotherapeutic medication to keep the diagnosis off their military record. Once in the theater they may experience a relapse or self-refer themselves to an MTF [medical treatment facility] when their medication supply is exhausted. The evaluating psychiatrist must determine if the soldier can function without the medication. If the soldier requires medication, can he be re-stabilized on a drug which can be provided in the theater? Can the drug be given without risk of harmful side effects? If the alternatives are not feasible, the soldier must be evacuated out of the theater.[15(p6-13)]

During the spring and summer of 2004, the Army mental health community recognized, based on experience in the first year of OIF, that the FM required some revisions based on the changes in overall Army doctrine and lessons learned from the first long-term sustained conflict in more than 30 years. In the new manual, *Combat and Operational Stress Control* (FM 4-02.51),[16] published in 2006, the word "medication" occurs 30 times in an 11-chapter manual. Although the overall number of times medication usage is discussed barely eclipses the number of times it was mentioned in the previous manual, a change in the accepted role of medications can be seen. Three sections in the new manual highlight the gradual move towards acceptance of psychotropic medication usage in a combat zone. Section 8-21 discusses how a service member may have both a combat stress reaction and a mental disorder, and directs clinicians to use clinical judgment and consultation to help "distinguish among these sometimes overlapping conditions."[16(p8-6)] When a service member presents with reemerging symptoms of a previously diagnosed mental disorder or for refill of previously prescribed psychotropic medication, "deferral of diagnosis is preferred, but diagnosis can be considered."[16(p8-6)] Sections 9-8 and 11-1 outline doctrinal changes in the role of medication in treating service members diagnosed with mental disorders while deployed. Section 9-8 states:

> Ongoing treatment and/or therapeutic modalities are essential to improving a Soldier's chances to RTD [return to duty] whether in theater or af-

TABLE 10-1

EXAMPLE PSYCHIATRIC FORMULARY FOR DEPLOYMENT

Medication	Amount
Antidepressants/Antianxiety Medications	
Citalopram 20 mg	15 bottles
Sertraline 100 mg	30 bottles
Prozac* 10 mg	5 bottles
Paroxetine 20 mg	5 bottles
Venlafaxine XR 37.5 mg	10 bottles (good for initiating treatment)
Venlafaxine XR 150 mg	10 bottles
Bupropion XL 150 mg	10 bottles (more if planning to do smoking cessation)
Bupropion XL 75 mg	10 bottles (good for initiating treatment)
Mirtazapine 20 mg	10 bottles
Benzodiazepines	
Lorazepam 1 mg tablets	30 bottles
Clonazepam 1 mg tablets	30 bottles
Lorazepam 2 mg injectable	30 dosages (must be refrigerated)
Antipsychotics/Antimanics	
Risperidone 1 mg tablets	10 bottles
Quetiapine 100 mg tablets	30 bottles (can be used off-label for PTSD, insomnia)
Olanzapine 5 mg tablets	10 bottles
Haloperidol injectable	30 dosages
Sleep Medications	
Trazodone 100 mg tablets	30 bottles
Zolpidem 10 mg tablets	30 bottles
Adrenergic Agents	
Clonidine 0.1 mg tablets	10 bottles (may be better for startle, flashbacks in PTSD)
Prazosin 1 mg tablets	10 bottles (may be better for nightmares in PTSD)
Propranolol 20 mg tablets	10 bottles
ADHD Medications	
Atomoxetine 20 mg tablets	10 bottles
Methylphenidate or Dexedrine†	10 bottles (may want to have combination of long-/short-acting forms)

*Eli Lilly and Company, Indianapolis, Ind
†GlaxoSmithKline, Philadelphia, Pa
ADHD: attention deficit hyperactivity disorder
PTSD: posttraumatic stress disorder
Reproduced from: Schneider BJ, Bradley JC, Benedek DM. Psychiatric medications for deployment: an update. *Mil Med*. 2007;172:683.

ter evacuation. Therapeutic modalities are similar to those used on inpatient units, but must remain consistent with COSC [combat operational stress control] principles. These modalities include medication, individual psychotherapy, group psychotherapy, and appropriate therapeutic occupations.[16(p9)]

Section 11-1 states:

> Behavioral health treatment is provided for Soldiers with behavioral disorders to sustain them on duty or to stabilize them for referral/transfer. This is usually brief, time-limited treat-

> ment as dictated by the operational situation. Behavioral health treatment includes counseling, psychotherapy, behavior therapy, occupational therapy, and medication therapy.[16(p11)]

Despite this subtle but real evolution of the role of psychotropic medications, in the fall of 2006—only 4 months after the FM was released—the Department of Defense developed criteria for psychiatric medications use in deployment. The policy was initially released in November 2006 in a memorandum titled *Policy Guidance for Deployment-Limiting Psychiatric Conditions and Medications*,[17] in response to a congressional directive[18] after several media reports of deployed mentally ill soldiers who were unstable or taking medications without follow-on care. The memorandum outlined the restrictions and minimum mental health deployment criteria for all soldiers. Exhibit 10-1 lists key factors related to medications in the policy. Although the policy does not address how long a soldier on a medication for anxiety, depression, or insomnia should be monitored, at least 1 month prior to deployment is a good time frame for consideration.

Current military operations in war zones such as Iraq or Afghanistan no longer have true "rear" areas to which soldiers can be evacuated and treated away from the threat of attack. The ability to provide more definitive treatment to soldiers with certain mood or anxiety disorders as far forward as possible is increasingly important in these operations. For most soldiers, this means that a battalion aid station, DMH element, or a combat stress team is the most easily accessible location for treatment that could allow the soldier to remain mission capable.

EXHIBIT 10-1

KEY POINTS IN THE NOVEMBER 2006 POLICY GUIDANCE FOR DEPLOYMENT-LIMITING PSYCHIATRIC CONDITIONS AND MEDICATIONS

- Soldiers currently being treated for psychosis or bipolar disorder are not deployable.
- Soldiers who are taking medications that require laboratory monitoring, such as lithium or valproic acid, are not deployable.
- Soldiers who are taking antipsychotic medications to control psychotic, bipolar, or chronic insomnia conditions are not deployable.
- The continued use of psychotropic medications that are clinically and operationally problematic during deployments, including short half-life benzodiazepines and stimulants, should be balanced between the necessity for successful functioning in the theater of operations and the ability to obtain the medication, the potential for withdrawal, and the potential for abuse.
- If a soldier is placed on a psychotropic medication within 3 months of deployment, then he/she must be improving, stable, and tolerating the medication without significant side effect to deploy.

Data source: Assistant Secretary of Defense. *Policy Guidance for Deployment-Limiting Psychiatric Conditions and Medications*. Washington, DC: Department of the Army; 2006.

PREDEPLOYMENT ACTIONS

It is imperative that all military primary care and mental health providers know where a soldier under treatment is in the deployment cycle. The stage of the deployment cycle can play a major role in the selection of particular medication choices. Communication among the soldier, medical and mental health providers, and the brigade surgeon and brigade behavioral health officer is essential to ensure that treatment plans are developed without creating additional unnecessary limitations for the soldier. Two key actions required before deployment are (1) determining if soldiers currently taking psychotropic medications meet the minimum mental health fitness standards for deployment, and (2) choosing the medications to make available during deployment.

Psychiatric Medication Clearance for Deployment

To determine if soldiers meet the minimum mental health standards for deployment outlined in Exhibit 10-1, units have added mental health medication screening to the predeployment medical screening process. In one recently deploying brigade combat team, screening questions were added to the face-to-face interview by a primary care provider; all soldiers taking psychotropic medications were required to meet with a behavioral health provider to ensure they met deployment requirements.

Case Study 10-1: A deploying brigade combat team of 3,312 soldiers implemented the process described above. The brigade identified 143 soldiers (4.3%) who were or had recently been under the care of a mental health provider, and 86 (2.6%) who were currently taking a psychotropic medication. Of those taking psychotropic medications, 53 (1.6%) used antidepressant medications; 11 (0.3%) used medications other than antipsychotics for chronic insomnia or sleep disturbances; 11 (0.3%) used stimulants for attention deficit problems; 8 (0.2%) used antipsychotic medications

for chronic insomnia; 2 (0.06%) used benzodiazepines for chronic anxiety symptoms; and 1 (0.03%) used Depakote (Abbott Laboratories, Abbott Park, Ill) for bipolar disorder. Of the group on medication, 68 (2.1%) required mental health clearance for deployment; of the 68, 4 (0.1%) were delayed 1 to 2 months before deploying for medication stabilization, and 3 (0.09%) were not cleared for deployment because of their medications (a tricyclic antidepressant, an antipsychotic, and a mood stabilizer). An additional 19 soldiers (0.6%) were deemed unqualified for deployment because of their current medication even though they were stable and performing required duties without impairment.[19]

For soldiers who are stable but on medications that disqualify them from deployment, such as a stimulant for attention deficit hyperactivity disorder or a low-dose antipsychotic for chronic insomnia, a waiver may be requested. The process is instituted through unit medical channels and is requested through the combatant command surgeon—the senior ranking command surgeon in theater. In most cases, if a unit provides a justification, plan for continuation of treatment, and safety assessment, the waiver is likely to be granted. Medications generally eligible for a waiver are benzodiazepines used for anxiety, stimulants for treatment of attention deficit disorder, nonlaboratory monitoring mood stabilizing agents for impulse control and nonbipolar mood management, and low-dose antipsychotics for sleep and anxiety symptoms. In deciding whether to request a waiver, a unit should consider the duties and responsibilities the soldiers will hold and ensure that they will have ongoing access to mental healthcare throughout deployment. The final decision on the waiver is at the discretion of the combatant command surgeon.

Case Study 10-2: The 19 soldiers deemed unqualified from the brigade combat team in Case Study 10-1 were eligible for waivers. Many were taking stimulants for attention deficit problems or low doses of atypical antipsychotics for chronic insomnia. The unit leadership deemed that most of the soldiers were critical to the mission, and waivers were requested for all of them. The waiver requests outlined length of time on the medication and how the soldier would be followed by mental health services during deployment. All soldiers received waivers and deployed. The DMH team and the brigade surgeon ensured that each of the soldiers was seen on a regular basis (monthly), and after 6 months of deployment, all remained in theater, stable, and functioning well in their duties.[19]

Psychopharmacologic Planning for Deployment

A psychiatrist assigned to a DMH or combat stress control (CSC) unit must determine what type of psychotropic medications, and how much of each, to obtain for use in a deployment. For most brigade combat teams, the individual who makes these decisions is the brigade surgeon; the surgeon often acts on the advice of the brigade behavioral health officer or the division psychiatrist. Factors to be considered are the current medications used by soldiers within the unit, the availability of medications in theater, and the maturity of the theater. Medications are class VIII in the military supply classification system, and most medical/mental health units deploy with an initial supply stock.

The brigade surgeon can determine which medications soldiers are currently taking by asking them during the predeployment screening program or consulting the local medical treatment facility pharmacist. Medication availability is determined by the local theater. The brigade medical supply officer can provide a standard formulary for the region in which the unit is deploying. For example, in the current conflicts in Iraq and Afghanistan, the medications available for resupply are determined by the central command pharmacy review committee. In preparation for deployments, brigade surgeons should ensure that local home station providers have the theater formulary, and that they utilize the listed medications as the first choice.

The maturity of theater plays a key role in the amount of medications a unit needs to take with it. An important finding of the original mental health assessment team (MHAT) in the first year of OIF was that psychotropic medications were not adequately available in theater and resupply was not effective.[20] However, the theaters in Iraq and Afghanistan have now become more mature, and resupply channels are clearly established and effective. The formulary provided by Schneider et al[14] (see Table 10-1) delineates initial planning guidance, but it should be modified based on the factors outlined above.

DISPENSING PSYCHIATRIC MEDICATION IN THEATER

Multiple factors affect the dispensing of medications in the deployed environment. Providers must be able to support follow up for individuals who are started on medications and ensure that resupply is available. A number of options for resupply of medications are available in theater. DMH units are generally located with Level-II aid stations, and CSC units may have relationships with local unit medical clinics. CSC units can also establish medication resupply channels with medical logistics units. Psychiatrists must maintain ongoing communication with their resupply sources to ensure availability as well as to report utilization trends, which allows medical supply officers to effectively maintain supplies.

Once medications have been obtained, their storage and security are the next consideration. Although most

medications are stable compounds, checking package inserts or asking the pharmacist or pharmaceutical company about any problems with keeping the specific compounds in the deployment environment is advisable. Deploying behavioral health units that intend to maintain their own medication supply should consider obtaining a small refrigerator for storage, taking into account the availability and source of power in theater. Medications such as benzodiazepines and stimulants are controlled substances with the potential for abuse. These medications must be securely maintained under clear standard operating procedures that fall within military regulations for maintenance of controlled substances.

Methods for dispensing psychotropic medications in theater will be determined by several factors, including the soldier's access to mental health services, the soldier's reliability, and the proximity of other pharmacy services. In current operations in Iraq, multiple methods have been utilized, including providing soldiers with a supply of medication, providing a starting dose and a prescription to take to the local aid station or pharmacy, or providing only a prescription for the patient to have filled locally. In general, soldiers should be provided no more than a 1-month supply of medication. Additionally, in 2006 the Army opened the TRICARE mail order pharmacy program, which allows soldiers to have refills shipped directly to them.

PHARMACOLOGIC TREATMENT OF MENTAL HEALTH CONDITIONS DURING DEPLOYMENT

Clinicians must make decisions regarding the extent of services they can safely and effectively provide within their units. Potential pharmacological interventions, such as medication for posttraumatic stress disorder (PTSD), attention deficit hyperactivity disorder, or smoking cessation fall into a "gray area" of in-theater treatment considerations. The decision to continue treatment or evacuate patients with these conditions depends on which medications are available, how significant the symptoms are, how the soldier initially responds to treatment, and how significantly the symptoms interfere with the soldier's assigned duties.

Mood Disorders

Bipolar Disorder

Bipolar disorder requires evacuation from the combat zone, especially if the soldier presents in the midst of a manic or hypomanic episode. Because the number of manic or hypomanic patients likely to present during military operations is minimal, psychiatrists should select medications useful for multiple situations. Because only acute and emergent management are conducted in theater, the most practical course of action is to stock at least two atypical antipsychotic agents, such as olanzapine, quetiapine, risperidone, aripiprazole, and ziprasidone. All of these medications are effective in treating acute mania and have multiple additional indications (mood instability, anxiety, agitation, psychosis, and augmentation strategies for depression).

Major Depressive Disorder and Dysthymic Disorder

In planning for the treatment of new-onset depressive disorders, clinicians should request a considerable quantity of the SSRI they are most comfortable prescribing. They should request the largest amount of an SSRI that is also indicated for new-onset anxiety disorders. Zoloft (sertraline [Pfizer-Roerig, New York, NY]) and Celexa (citalopram [Forest Pharmaceuticals, Saint Louis, Mo]) are reasonable first choices because neither interacts significantly with other medications through the cytochrome P450 enzyme system, and both are usually well tolerated by both depressed and anxious patients.[21,22] The long half-life of fluoxetine offers an advantage; however, its tendency to be more activating than other medications makes its use for both anxiety and depressive disorders less favorable.[23] Paroxetine's potential for a discontinuation syndrome if doses are missed could prove problematic in a combat zone.[24] Additionally, paroxetine's anticholinergic properties may prove problematic in Iraq, where temperatures often reach 140°F. Nonetheless, a small supply of all of the SSRIs mentioned above should be secured, because these medications are so commonly prescribed that clinicians will surely encounter patients who either are currently receiving them or have responded favorably to them in the past.

Clinicians should also consider keeping at least two non-SSRI antidepressants in the formulary (see Table 10-1). Some deployed psychiatrists have selected bupropion and venlafaxine because they have different mechanisms of action than the SSRIs and both can be used for more than treatment of depression (bupropion for attention deficit hyperactivity disorder and smoking cessation, and venlafaxine for generalized anxiety disorder), allowing for maximal flexibility and economy.[25,26] Other potential choices include Cymbalta (duloxetine [Eli Lilly and Company, Indianapolis, Ind]) and Remeron (mirtazepine [Organon USA, West Orange, NJ]). The recently released Cymbalta has a mechanism of action similar to that of venlafaxine with less reported risk of causing hypertension, and Remeron treats insomnia, which is nearly ubiquitous

during deployments.[27,28] Not recommended are tricyclic antidepressants, which have anticholinergic properties, and nefazadone, because of the potential need for laboratory monitoring with liver function tests.

Anxiety Disorders

SSRIs are the mainstay of treatment for various anxiety disorders because they have demonstrated efficacy in panic disorder, PTSD, obsessive-compulsive disorder, and generalized anxiety disorder.[29–31] Clinicians should consider having one SSRI in large quantities to be used for both depressive and anxiety disorders. Benzodiazepines may be helpful for panic disorder and acute stress disorder because they improve sleep and decrease general anxiety symptoms, although they may increase the severity of PTSD, especially if used for long periods.[29] Venlafaxine may be useful in treating generalized anxiety disorder. A useful adjunct in the treatment of acute stress disorder and PTSD is an α-adrenergic or β-adrenergic receptor antagonist to target the autonomic symptoms and nightmares that may be associated with these disorders. Prazosin is a medication in this group with preliminary data supporting its usefulness in treating trauma-related nightmares.[32]

Psychotic Disorders and Acute Agitation

Injectable haloperidol and lorazepam remain excellent choices for management of acutely agitated, violent, or psychotic patients.[33] Although injectable forms of both Geodon (ziprasidone [Pfizer-Roerig]) and Zyprexa (olanzapine [Eli Lilly and Company]) are now available that may have better side-effect profiles, including decreased risk of extrapyramidal symptoms, both require preparation (being mixed with sterile water for 1–5 minutes) before use.[34,35] Additionally, DMH sections and CSC units have a limited number of psychiatrists and psychiatric clinical nurse specialists. Physician's assistants, general medical officers, flight surgeons, and others who transport soldiers between echelons of care often have limited experience with these medications and may be more comfortable with Haldol (haloperidol [Ortho-McNeil Inc, Titusville, NJ]) as the antipsychotic agent for treating acute mania, agitation, or psychosis in a combat zone.[33]

The authors recommend that deploying psychiatrists' formulary include two orally administered atypical neuroleptic agents, one injectable typical neuroleptic agent (most likely haloperidol), one injectable benzodiazepine (most likely lorazepam), and injectable Benadryl (diphenhydramine [Pfizer]). The latter is useful to treat agitation and some acute side effects (such as dystonic reactions) of neuroleptic agents.

Insomnia

Insomnia was the most common symptom reported by soldiers presenting for care at the 528th CSC during the first year of OIF.[14] Clinicians treating soldiers with insomnia must initially decide whether the problem is part of a major psychiatric disorder, a symptom of operational stress, or an adjustment disorder. In the absence of other symptoms, behavioral interventions such as education on sleep hygiene may be the preferred initial intervention because of the possibility that prescribed medications will cause drowsiness during missions or difficulty awakening during times of peril. The decision to use medications should include consideration of the soldier's military occupational specialty, current duties, comorbid symptoms, substance use history, and estimated ability to adhere to instructions and the recommended dosing schedule. Potential deployment formulary medications for the treatment of insomnia include trazodone, zolpidem, lorazepam, clonazepam, prazosin, and quetiapine.[14]

Trazodone is particularly useful for patients with difficulty staying asleep throughout the night.[36] To maximize its successful use, clinicians must spend extra time educating patients about how to take this medication in a field environment. One disadvantage of trazodone is its tendency to cause morning sedation or sluggishness, particularly if the dose is too high. Frequently, the standard dosage (50 or 100 mg with subsequent 50- to 100-mg increments) leaves a patient either undermedicated or overmedicated. Because the 528th CSC prescribed this medication only for sleep, patients there were given a range of pill strengths (usually between 25 and 200 mg) and flexible dosing instructions. They were encouraged to take the initial moderate dose to assess their individual response and then titrate the dosage up or down within the predetermined dosage range until they could (*a*) fall asleep within 1 hour of taking the medication, (*b*) sleep all night, and (*c*) wake up without feeling groggy.

Lorazepam and clonazepam proved most useful in treating patients at the 528th CSC with prominent anxiety symptoms in addition to insomnia. These medications were practical for patients who presented with panic attacks and insomnia because they could be taken in divided doses to treat both problems, sparing the soldier a more complicated treatment regimen. However, clinicians must carefully evaluate a patient's need to take these medications for extended periods to prevent physiological dependence, which could lead to withdrawal if refills are unavailable. Patients who have a history of substance abuse or are thought to be at risk for abuse should generally not be prescribed benzodiazepines in theater. Clinicians must use care

to ensure that patients taking benzodiazepines are closely monitored. It is prudent to inform someone in the soldier's chain of command (with the soldier's consent) when sleep medications are prescribed because they may affect the soldier's ability to perform duties during the first few days while the dosage is being adjusted.

Ambien (zolpidem [Sanofi-Aventis, Bridgewater, NJ]) is particularly useful for treating patients with initial insomnia as an isolated symptom or in the context of a mood disorder.[37] Prazosin, although not yet extensively studied, has received increasing attention for helping to alleviate nightmares brought on by traumatic experiences.[32] Seroquel (quetiapine; AstraZeneca US, Wilmington, Del) may also be useful in this population, as well as for patients with bipolar II disorder, both as a treatment for insomnia and as a mood stabilizer.

ETHICAL ISSUES

The conflicts in Iraq and Afghanistan present for the first time since the advent of "biological psychiatry" a situation in which a large part of the military is forward deployed for extended periods. In addition, many service members are returning to combat zones for second or third tours of duty. The risks of keeping service members diagnosed with psychological problems in theater, or redeploying these patients a second or third time, presents a worrisome ethical question. Medication use may inform this discussion.

The most prevalent disorders in theater are anxiety and depressive disorders. Most of the disorders in these two categories respond to treatment with psychotropic medications. If a soldier has a mood or anxiety disorder and a desire or duty to deploy to a combat zone, and a provider believes medication will help resolve the symptoms and contribute to successful performance, then perhaps the ethical decision is to provide the treatment. Historically, large numbers of service members who required evacuation for psychiatric symptoms never returned to their units and, unfortunately, developed chronic dysfunction and guilt.[38] Although mere presence in a combat zone is a risk factor for psychological sequelae, experience has shown that failing to successfully negotiate, process, and come to proper closure with an experience as emotional as a deployment may also present long-term challenges.[6] Modern psychotropic medications can clearly reduce psychiatric symptoms of many disorders in the combat theater. The extent to which medication and treatment may facilitate successful negotiation and processing of combat experience and thus reduce long-term morbidity, however, remains an open question.

SUMMARY

The use of psychotropic medications in combat has evolved significantly, mirroring changes in psychiatric practice and use of these medications in the military garrison environment and the civilian sector. Many disorders are now being successfully treated with medications in theater. Psychiatrists must prepare a deployment formulary before departure, and consider the individual circumstances as well as guidelines for pharmaceutical usage in theater. Factors such as the nature of the conflict, duration of deployment, size of deploying force, and guidance of military doctrine and policy will continue to inform and shape the use of psychotropic medications in combat zones.

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