Pharmacology of Post-Traumatic Stress Disorder: A Brief Summary

Antidepressants

	Drugs and Dosages	Comments
Selective Serotonin Reuptake Inhibitors	Paroxetine 10-60 mg Sertraline 50-200 mg Fluoxetine 10-80 mg Fluvoxamine 100-300 mg Citalopram 10-60 mg Escitalopram 10-20mg	**First line for treatment of PTSD.** Several RCTs support efficacy in reducing symptoms in all three core symptom clusters (re-experiencing, hyperarousal, avoidance).
Serotonin Norepinephrine Reuptake Inhibitor	Venlafaxine XR 75-225 mg	Two recent RCT's support efficacy (one showed outcomes comparable to Sertraline)
Serotonin-Dopamine Reuptake Inhibitor	Bupropion SR 150-300 mg	One RCT did not show significant effect; a substantial proportion of individuals may experience agitation and restlessness.
Noradrenergic/ Specific Serotonergic Antidepressants	Mirtazapine 7.5-45 mg qHS	Several open trials and one small RCT supporting effectiveness in overall symptoms PTSD. Several case reports, anecdotal reports of usefulness in treating insomnia and nightmares (likely due to alpha-adrenergic blockade)
Serotonin-2 Antagonists/ Reuptake Inhibitors	Trazodone 25-300mg (for sleep qHS)	Originally developed as an antidepressant but was too sedating, therefore used now as a sleep agent.
Tricyclic Antidepressants; Monoamine Oxidase Inhibitors	e.g. Amytriptaline, Desipramine; Phenelzine, Tranylcypromine	Not recommended as first-line therapy due to side effect and safety profile (potentially fatal in overdose). Some clinicians use small dose TCA as a sleep agent (e.g. amytriptaline 10-25 mg qHs) which is also used to assist pain control

Adrenergic Agents

Class	Drugs and Dosages	Comments
Alpha-2-receptor agonist	Clonidine 0.2-0.4 mg qHs for nightmares and insomnia Can add 0.1-0.2 mg qAM for daytime agitation and hyperarousal symptoms.	The mainstay of treatment over past twenty years in a one clinic serving a diverse refugee population. (Boehnlein and Kinzie, 2007) * requires baseline and periodic

		blood pressure monitoring (risk of hypotension) efficacy uncertain
Alpha-1-receptor antagonist	Prazosin 1 mg qHs, to increase by 1-2 mg every few days until nightmares controlled and sleep restored, to max. 15 mg daily. Daily dose can be divided to treat daytime hyperarousal symptoms.	Small placebo-controlled trial showing good effect for nightmares and insomnia; "moderate" effect for overall Sx PTSD. *requires baseline and periodic blood pressure monitoring (risk of syncope due to hypotension) efficacy uncertain
Beta-adrenergic receptor antagonist	Propranolol Initial dose 40 mg BID.	Of significant research interest at present for the prevention of PTSD *contraindicated in individuals with congestive heart failure, asthma, sinus bradycardia or first degree heart block

Antipsychotics

	Drugs and Dosages	Comments
Atypical Antipsychotics	Risperidone 0.25-6 mg Olanzapine 2.5-20 mg Seroquel 25-600 mg	May be useful adjuncts to SSRIs to reduce PTSD-related irritability, intrusive re-experiencing, insomnia, nightmares. Used to treat trauma-related psychosis. Little evidence for efficacy as mono-therapy for PTSD. All carry risk of metabolic syndrome (obesity, impaired glucose tolerance, increased lipids, hypertension).
Typical Antipsychotics	e.g. Haloperidol, Perphenazine, Methotrimeprazine	For treatment of trauma-related psychosis. High potency antipsychotics such as Haloperidol carry risk for extrapyramidal symptoms, including tardive dyskinesia. Low potency antipsychotics such methotrimeprazine (Nozinan) may be useful as PRN medication for anxiety, agitation and insomnia 5-10mg qid prn

Mood stabilizers

Drugs	Comments
Lithium, Lamotrigine, Carbamazepine, Divalproex, Gabapentin, Topiramate,	Generally modest results in small open trials and case reports. Recent RCT found Divalproex monotherapy ineffective in treating chronic PTSD in older combat veterans; One small RCT of lamotrigine showed improvements over placebo in reexperiencing and avoidance/numbing symptoms. Mood stabilizers as a class may have a role in the control of trauma-related aggression and irritability.

Benzodiazepines:		Dosing (daily in divided doses, or at bedtime)
Lorazepam (Ativan)	1-2 mg	Carry a significant potential for abuse and dependence especially in PTSD spectrum pts, with difficulties discontinuing the medication in the long term. Regular use may interfere with the processing of traumatic memories in therapy, new learning, or may produce state dependent treatment effects that do not persist once the medication is discontinued. **Avoid PRN use of short-acting benzodiazepines such as Alprazolam (Xanax); these have high addictive potential.** No evidence of effectiveness in treating PTSD, or PTSD Sx in the long term, but nonetheless may have a short-term role in intense anxiety and panic attacks (3 weeks max). One example of rational use of a benzodiazepine would be to prescribe concomitantly with an SSRI, tapering over the first 10-14 days of treatment.
Clonazepam (Rivotril)	0.5-2 mg	
Diazepam (Valium)	2.5-10mg	

How to use medications to treat trauma spectrum disorders – these are most effective if used in conjunction with ongoing trauma informed psychotherapy

Most patients with PTSD require an SSRI which is evidence based first line treatment

Then identify target problems/symptoms –

e.g. sleep, we advise no less that 5 hours continuous sleep, no day time napping, and no more than 10 hours lying down in 24 hours this includes sleep. Useful non addicting medication: Trazodone, Clonidine, Zopiclone (5-15 mg), Mirtazapine, low dose Amytriptaline, Atypical Antipsychotics, Methotrimeprazine (Nozinan 10-25 mg), Dimenhydrinate (Gravol 25-50 mg), Diphenhydramine (Benedryl, 25-50 mg)

e.g. aggression – mood stabilizers and or novel antipsychotics

e.g. mood instability – mood stabilizers

e.g. nightmares – sleeping medications, novel antipsychotics, clonadine, prazosin

e.g. anxiety attacks – Once on an SSRI if the patient requires prn assistance use Nozinan 5-10mg qid prn, or Serequil 12.5-25mg tid prn,

e.g. performance anxiety – propranolol 20mg pre event

For more information, see John Briere and Catherine Scott, *Principles of Trauma Therapy*, ch.12. London: Sage Publications, 2006.