Research Article

Personal Formulary for Post-traumatic Stress Disorder Developed by Residents of Pharmacology

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ABSTRACT

The background of this study is Drug selection for PTSD is carefully selected based on experience and evidence. To reduce the hospital drug crisis, P-Drugs must be developed. The goal of personal formulary development is to improve the effectiveness, safety, availability of medicines in decision making. The aim of this study is to develop Personal formulary for post-traumatic stress disorder. Local residents educated and developed PTSD drug kits. Scores were assigned to marketed drugs using 4 parameters provided by Joshi and Jayavikramarajah: efficacy, safety, cost, and convenience of drug groups. Fractions were assigned according to the importance of the drug to give efficacy 0.4, safety 0.3, cost 0.2, and convenience 0.1. The evaluation was done in 4 dimensions from 1 to 10. Taking all the above factors into consideration, the SSRIS group received the highest score and was selected as the most suitable group for developing a personal PTSD formulary. Typically, paroxetine, sertraline, fluoxetine, escitalopram, and citalopram have been prescribed for post-traumatic stress in SSRIS. Among the five drugs, paroxetine has a good value for money. Paroxetine has little effect on other body systems and reduces induced PTSD. Therefore, paroxetine has the highest efficacy and safety. This project has significantly improved the skills of residents by developing a personal form after appropriate discussion in accordance with WHO goals. This will help to promote the rational use of medicines for residents in the future careers as doctors.

Keywords: P-Drug, PTSD, Efficacy, Safety, Cost and Convenience.

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INTRODUCTION

Posttraumatic Stress Disorder (PTSD) is divided from anxiety disorder to stress-related DSM-5. Mental illness accounts for about 14% of the global burden of disease, depression and anxiety as the leading causes of disability worldwide. PTSD is a syndrome characterized by recurrent traumatic event (e.g., sexual abuse, severe burns, military violence) and decreased response and avoidance of current traumatic events [1]. Data show that 5-10% of people suffer from PTSD and are twice as likely as women than men [2]. PTSD is more common when the event is associated with physical injury. Most people with PTSD (20-40%) have experienced other related problems, including divorce, Parental Problems, legal difficulties, and substance abuse. Several psychiatric interventions have been shown to be effective in treating PTSD in adults, particularly eye movement and rehabilitation (EMDR) and trauma-based psychotherapy (TF-CBT) [3]. Given the wide variety of interventions available and the need to make better use of health care resources, the aim of this study was to evaluate the efficacy of a variety of psychosocial interventions in treating PTSD in adults from the perspective of the National Health Service (National Health Service). NHS) and Personal Social Services (PSS) in India (Bihar), using economic modelling to analyse decisions.

Clinical findings

At the heart of the diagnosis of PTSD is a history of exposure to alleged or life-threatening events, serious injuries, or sexual assault[3]. This can include serious medical conditions and the prevalence of PTSD is higher in people who have had a medical condition such as cancer. Symptoms of PTSD include compulsive thoughts (e.g., memories, nightmares), avoidance (e.g., withdrawal, negative thoughts and emotions and increased reactivity. Patients with PTSD may experience physiological hyperexcitability. Including startle reactions, fantasies, over generalized associations, sleep problems, nightmares, provocative dreams, impulsivity, difficulty concentrating, and increased arousal. Symptoms may be triggered or exacerbated by events reminiscent of the original traumatic event [4].

Example, child abuse can lead to later development of PTSD. DSM5 includes a requirement that symptoms persist for at least 1 month. In some people, symptoms go away over months or years, but in others, they can last a lifetime. The Primary

Care PTSD Screening and PTSD Checklist are two useful screening tools for primary care clinics or communities at risk of injury.

Differential diagnosis

Post-traumatic stress disorder is accompanied by depression or panic disorder in 75% of cases, and the complex symptoms of the three symptoms are generally the same. Acute stress disorder has many of the symptoms of PTSD, but symptoms last from 3 days to a month after the injury.

Etiology and Pathology

In PTSD, it has been suggested that excessive release of norepinephrine from the coeruleus locus in response to stress and increased noradrenergic activity in the hippocampus and projection regions of the amygdala has been proposed. These changes theoretically make it easier to encode basic fear memories[5]. A more pronounced sympathetic response to signals associated with the traumatic event occurs in PTSD, but the pituitary adrenal response is dull.

Treatment

A. Psychotherapy

It should be initiated after the traumatic event, and it should be brief typically 8-12 session, once the individual in a safe environment. Cognitive processing therapy, prolonged exposure therapy, and eye movement desensitization reprocessing have been effective in significantly reducing the duration of symptoms.

B. Medical

SSRIs are helpful in ameliorating depression, panic attacks, sleep disruption, and startle responses in PTSD. Sertraline and paroxetine are approved by the us FDA for this purpose, and the SSRIs are the only class of medications approved for the treatment of PTSD. Early treatment of anxious arousal with the beta blockers (eg, Propranolol,80-160mg orally daily) may lessen the peripheral symptoms of anxiety (eg, tremors, palpitations) but has not been shown to prevent development of PTSD[5]. Similarly, non-adrenergic agents such as clonidine (titrated from 0.1 mg orally at bed time to 0.2 mg three times a day) have been shown to help with the hyperarousal symptoms of PTSD. The alpha-adrenergic blocking agents Prazosin (2-10mg orally at bed time) decreases nightmares and improves quality of sleep in PTSD. Antiseizure medications such as carbamazepine (400-800 mg orally daily) will often mitigate impulsivity and difficulty with anger management. Benzodiazepines, such as clonazepam (1-4 mg orally daily, divided intone or two doses), will reduce anxiety and panic attack when used in adequate dosage, but dependency problem are a concern[6].

Prognosis

The sooner treatment is started after an, the better the prognosis. About half of patients have chronic symptoms. The prognosis is best for people with good premorbid mental status. People with acute stress disorder generally do better in the long run than people with delayed PTSD[7].

IGIMS Pharmacology Department is at the forefront of personal formulary development. The ultimate goal of this document is to develop your own personal formulary to help determine the safety, efficacy, and persuasiveness of the use of drug P. This article discusses Drug P and Reasonable Drug Prescribing. The P-drug drug concept is based on an institutional framework that is an appropriate prescribing guide. There are four criteria for comparing drugs: efficacy, safety, cost, and convenience. P -drug chosen by a physician, i.e., a drug chosen according to his own interpretation based on efficacy, safety, cost and convenience[8].

MATERIALS AND METHODS

This study will be carried out in the department of Pharmacology, IGIMS, Patna with the help of residents.

Personal formulary for post-traumatic stress disorder was developed with the help of, standard books, Current Index of Medical Specialities (CIMS) and Drug today to determine efficacy safety cost and the convenience of group of drugs used for PSTD efficacy is determined according to the efficacy profile given in the text books. Drugs with more efficacy were given higher score and vice versa. Safety was determined by their adverse effect profile. Less adverse effect will get higher score. Cost was determined with the help of CIMS and Drug today by taking average cost of different brands and convenience was determined according to the availability of drugs, dosage form, dose schedule, route of administration.

we were determining all the 4 criteria given for P-drug by Joshi and Jayawickramarajah, efficacy safety, cost and convenience of group of drugs. For efficacy (0.4), Safety (0.3), Cost (0.2), and convenience (0.1) was considered for each group of drugs. Scores was given to each parameter from 1 to 10 for each drug. z=a×b where **z** is total score, **a** is the fractional numerical value given according to the importance i.e., efficacy (0.4), Safety (0.3), Cost (0.2), and convenience (0.1) and **b** is the score (1 to 10). Higher score results a better value. Higher score became the personal drug of choice.

RESULTS

Table 1: Selection of personal formulary from drug group for PTSD

Drug/Drug group	Efficacy(0.4)	Safety(0.3)	Cost(0.2)	Convenience(0.1)	Total
SSRI	8(3.2)	7(2.1)	6(1.2)	9(0.9)	7.4
SNRI	8(3.2)	6(1.8)	5(1)	9(0.9)	6.9
Benzodiazepines	6(2.4)	7(2.1)	7(1.4)	6(0.6)	6.5
B- Blockers	4(1.6)	5(1.5)	7(1.4)	6(0.6)	5.1

Table 2: Selection of personal formula drug among SSRI for PTSD

Drug/Drug group	Efficacy(0.4)	Safety(0.3)	Cost(0.2)	Convenience(0.1)	Total
Paroxetine	8(3.2)	7(2.1)	5(1.0)	**9(0.9)**	**7.2**
Sertraline	8(3.2)	6(1.8)	6(1.2)	**8(0.8)**	**7.0**
Fluoxetine	7(2.8)	6(1.8)	7(1.4)	**8(0.8)**	**6.8**
Escitalopram	7(2.8)	6(1.8)	6(1.20	**8(0.8)**	**6.6**
Citalopram	7(2.8)	5(1.5)	6(1.2)	**7(0.7)**	**6.2**

Table 3: Cost of Drugs/Drug Group available in India used in the treatment of PTSD

Drug/Drug Group	Dose	No of Brands	Range min/max per tab	Average cost
1. **SSRI**				
a. Fluoxetine	20-60mg	14	2.5/10.3	6.4
b. Paroxetine	20-50 mg	7	3.75/28.1	17.8
c. Escitalopram	10-20 mg	12	2.8/13.43	9.51
d. Sertraline	25-200mg	16	2.4/13.7	8.05
e. Citalopram	20-60 mg	5	5.67/12.8	12.07
2**. SNRI**				
a. Venlafaxine	37.5-225mg	11	1.9/70.0	35.95
3. **Benzodiazepin**				
a. Diazepam	5 - 30mg	6	0.29 / 2.52	40.5
b. Oxazepam	30 - 60mg	4	0.66 / 1.14	0.9
c. Lorazepam	1 - 6mg	13	0.75 / 1.85	33.3
4. Beta Blockers				
1.Proponol	40 -120mg	8	1.35 / 2.47	1.91

Table 4: Description of Paroxetine as Personal formulary in Post-Traumatic Stress Disorder (PSTD)

Tablet 12.5, 25 mg	Post-traumatic stress disorder (PSTD)	Paroxetine

- **Dosage**

Post-traumatic stress disorder (PSTD) In adult: 12.5, 25 mg OD increased to 40mg daily, if needed

- **What to tell the Patients**

PSTD: Paroxetine when administered reduces the induced PSTD with little effect on other body systems. It has lower dependence producing liability.

Side effects: Drowsiness, blurred vision, Fatigue, myalgia, Dependence, withdrawal syndrome.

Contraindications: Acute narrow angle glaucoma, Sexual distress, agitation, sever renal impairment, history of Seizure, hepatic impairment, avoid abrupt withdrawal.

Instructions

Take Tab. Paroxetine12.5mg OD per day orally for 30 days

Next appointment:

Review after 30 days

Follow Up

PSTD: review after 30 days for reassessment of drug effect.

DISCUSSION

According to the WHO, rational drug use is that patients receive drugs at an affordable cost according to their clinical needs, the exact dosage and duration. This would be consistent with a good prescribing guide that includes 6 guidelines for rational use. Standards are reviewed for conformity. It is usually a drug for the treatment of a disease, and in step [3b], suitability for a particular patient is checked and the drug is changed if necessary. Fill out a prescription and start treatment, provide patient data, Monitor treatment. Residents talked about the concept of the P-drug formulary[9]. This task was performed in a group using diagnostics, treatment costs[10] using the current index of medical specialist (CIMS)[11] and textbooks available from university and department libraries. Residents participated in the project and announced the results. After the presentation, a discussion took place. For PTSD, each of these four methods was scored on a scale of 0 to 1 and divided by the most important measure, performance, yielded a score of 0.4, safety 0.3, cost 0.2, and ease of use 0.1[12]. The drug/drug groups were then identified using standard textbooks.

Four groups of P- drugs (SSRIs, SNRIs, Benzodiazepines and Beta blockers) are commonly prescribed to treat PTSD. Determining which type of drug to prescribe for a particular indication greatly simplifies selection as it depends on the availability of different drugs based on efficacy, safety, cost and convenience in each class [13]. The parameter was then taken and estimated. First, as a result of evaluating the efficacy between drug groups[14], it is thought that the SSRIs group received the highest score, and Paroxetine was found to be very effective in various anxiety disorders such as PTSD such as social phobia and generalized anxiety disorder.

SSRIs have a mild sedative effect, gastrointestinal disturbances, akathisia and anorgasmia. The paroxetine group scored the highest (Table 1). Similar considerations apply when selecting many agents for the same class. Therefore, it is very important to select a specific drug from a treatment class [15]. When P-Drug is selected, a personal form is filled out with information in the form of a scratch pad on the voucher with details of the drug's effects, side effects, instructions, warnings, and next dose according to the prescribing guide[16] (Table 4)[4]. Because many drugs belong to the same class, there are many challenges when teaching or developing a personal formulary, such as a large number of brands and different price, efficacy comparisons, and class-to-class comparisons[17]. There is no significant difference in scores between paroxetine, sertraline, fluoxetine, escitalopram, and citalopram when selecting treatment for post-traumatic stress disorder. We compared our drug (paroxetine) to a drug commonly used in other groups. And, as expected, our drug outperformed other drugs used for PTSD.

CONCLUSION

Paroxetine, which prioritized efficacy over safety, cost, and convenience when selecting a P-drug for the treatment of PTSD considering efficacy, safety, cost and convenience, was selected as a P-drug for antidepressant treatment for PTSD. The project significantly improves skills of its residents by developing a personal form after appropriate discussion in line with WHO goals. This will contribute to the rational use of drugs by the population.

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