Original Research

Prescribing pattern of Antidepressant and/or anxiolytic drugs in General Medicine ward in a Tertiary Care Centre in Eastern India: A cross-sectional observational study

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Abstract:
Introduction: Depression and anxiety are common mental disorders highly prevalent in patients with chronic medical illness. Patients receiving other medication along with antidepressants /anxiolytics are at high risk for the occurrence of greater side effects, drug interactions, toxicities.This study was planned to observe the antidepressant /anxiolytic prescription pattern in patients in medicine wards, especially with various medical co-morbidities.
Methodology: Patients admitted in theMedicine wards of Burdwan Medical College & Hospital during the last 1 month with at least one antidepressant and/or anxiolytic prescription were included in the study. Data was collected from the indoor prescriptions of these patients. Demographic profile including co-morbid conditions were recorded. The overall and individual prevalence of antidepressant and/or anxiolytic drugs was determined and indication and rationality of use of the drug was assessed. Any potential drug that could have caused any interaction during the study period was identified and recorded.
Results: Out of 516 patients, 138(26.7%) patients were prescribed anti-anxiety drugs, 51(9.88%) received antidepressants and 7(1.35%) received both. Benzodiazepines were the most prescribed anti-anxiety drugs. Alprazolam and Clonazepam were the top two benzodiazepines prescribed in patients. Among the antidepressants, tricyclic antidepressants were the most common. Most common of them was Amitriptyline. 7.2% patients were prescribed anti-anxiety drugs and13.7% received antidepressants without appropriate indications. Prescriptions with potential drug interactions were found in 22 patients.
Conclusion: Both anxiolytics and antidepressants were more commonly prescribed in females. Anxiolyticprescription was maximum in cases of myocardial infarction while antidepressants were common on patients with chronic liver disease. 4.2% of the patients were prescribed drugs which had chances of potential drug interactions.

Keywords: Prescribing pattern, anxiolytics, antidepressants, indication and rationality of use, potential drug interactions

Introduction:

The coexistence of mental health problems with chronic somatic illnesses is common. Depression and anxietyare common mental disordersthat is highly prevalent in patients with chronic medical illness. Therefore, these medically ill populations are often likely to receive antidepressant and/or anxiolytic therapy as part of their treatment[1]Antidepressants and anxiolyticsare therefore often prescribed in general medicine wards and most of these prescriptions are without a proper psychiatric diagnosis.[2]Patients receiving other medication along with antidepressants/anxiolytics are at high risk for the occurrence of greater side effects, drug-drug interactions, toxicities, and may mitigate compliance with treatment.[2]Therefore, the extent of antidepressant/ anxiolytic drug consumption is an issue of concern. The use of these agents in psychiatric wards has been investigated but lacunae lies in relation to the rationality of the use and indication of antidepressant and/or anxiolyticsin the non-psychiatric wards, particularly in the medicine wards where most of the patients are admitted with comorbidities like cardiovascular disease, renal failure, diabetes, liver disease etc.A study through a systematic review of the literature has identified a high occurrence of mental illness in about 20% of patients in the cardiology area, 25% in nephrology

and 30% of patients with liver problems. [3]Only few studies have evaluated the antidepressant and/ or anxiolytic prescription in hospitalised medically ill patients with co-morbid conditions. Therefore, this study was planned to observe the antidepressant /anxiolytic prescription pattern in patients in medicine wards, especially with various medical co-morbidities.

Materials & methods:

This cross-sectional observational study was conducted from August 29th to September 29th 2022 (1month). The objectives of the study were to determine the prevalence and nature of antidepressant and/or anxiolytic drug use in general medicine ward, to determine the indications of use of these medications in the medicine ward, to assess the rationality of their use in patients with multiple comorbidities and to evaluate the potential drug interactions that could have occurred due to irrational prescribing of these drugs. Patients admitted in the IPD of Medicine ward of Burdwan Medical College & Hospital during the last 1 monthwith at least one antidepressant and/or anxiolytic prescription wereincluded in the study. Patients with history of psychiatric illness or on regular treatment with the psychotropic or social history of psychotropic drug abuse were excluded. Data was collected from the indoor prescriptions/treatment sheets. Demographic parameters including any co- morbid medical illness of the patient for which he/she was admitted,was recorded.The overall and individual prevalence of antidepressant and/or anxiolytic drugs in general medicine ward was determined and indication and rationality of use of the drug was assessed. Any potential drug that could have caused any interaction during the study period was identified and recorded.

Results:

Out of total of 516 patients admitted to the general medicine ward of Burdwan Medical College and Hospital,138(26.7%) patients were prescribed antianxiety drugs, 51(9.88%) patients received antidepressants and 7(1.35%) patients received both. Antianxiety drug use was most prevalent in 51-60 years while antidepressant drug prescription was highest in patients of 71-80 years. Females received more antianxiety and antidepressants than males(57.3%). Benzodiazepines were the most prescribed antianxiety drugs. Alprazolam and Clonazepam were the top two benzodiazepines prescribed in patients. Among the antidepressants, tricyclic antidepressants (TCA) were the most common antidepressants prescribed. Most common of them was Amitriptyline.

Table:I Demographic parameters

Age group	Total patients	Anxiolytics	Antidepressants
18-30	32	5(15.6)	4(9.3)
31-40	78	21 (26.2)	3 (3.8)
41-50	82	37 (45.3)	6 (7.3)
51-60	91	28 (29.5)	12 (13.1)
61-70	122	30 (24.5)	10 (8.2)
71-80	87	14 (16.1)	14 (16.1)
81-90	32	0	5 (15.6)

Gender	Antidepressant	Anxiolytics
Male	23 (7.7)	64 (21.4)
Female	29 (13.3)	70 (32)

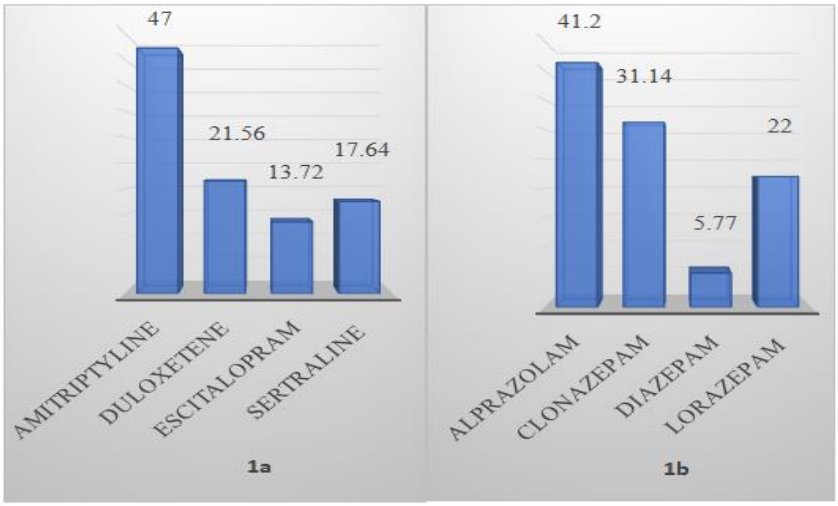

Fig 1: prevalence of use of anxiolytics (1a) and antidepressants (1b)

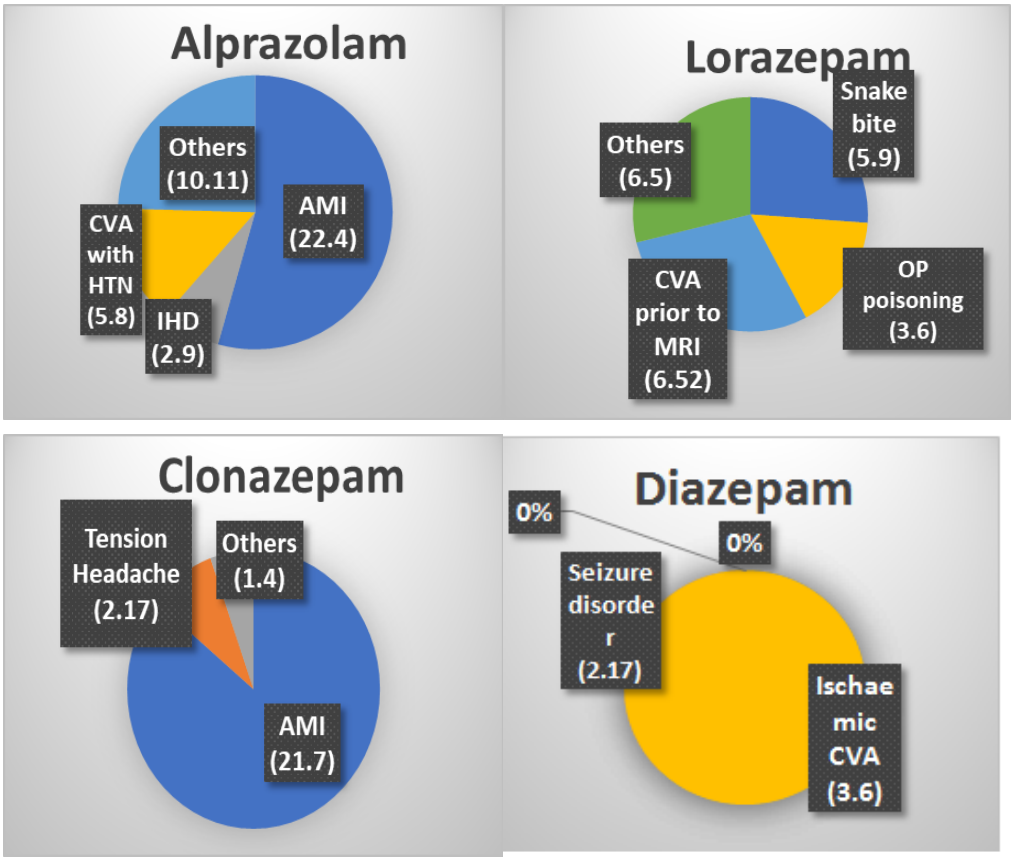

Fig 2: Prescribing pattern of anxiolytics

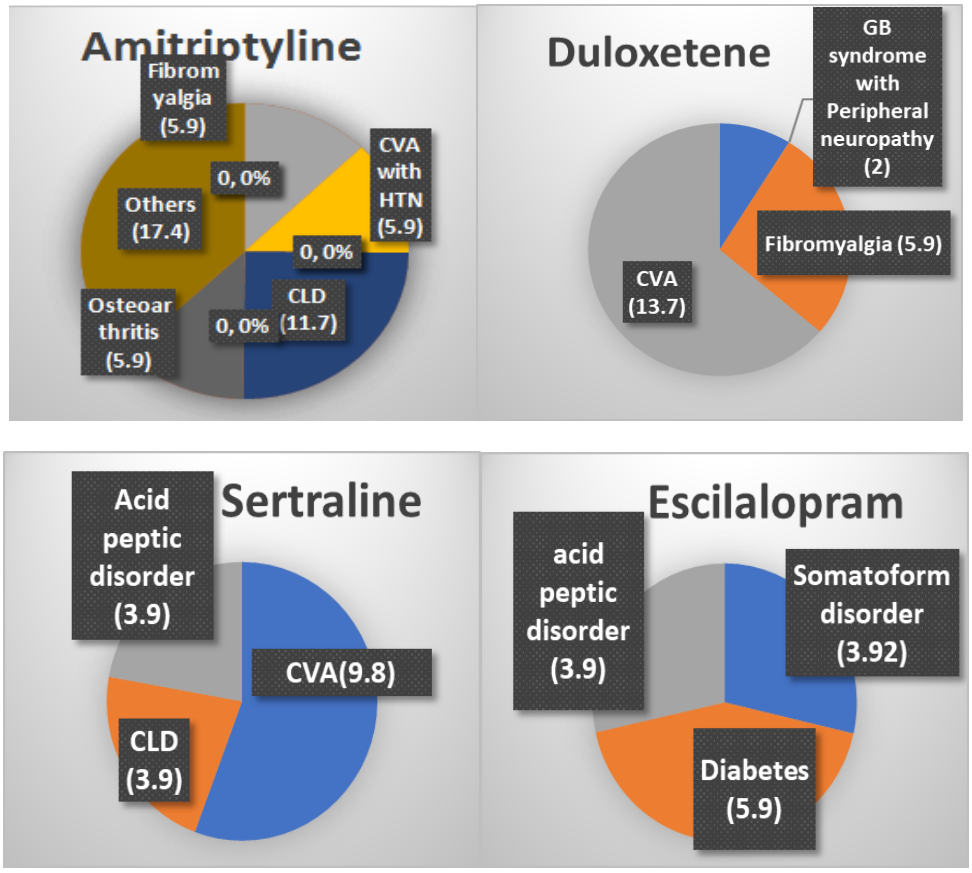

Fig 3: Prescribing pattern of antidepressants

Table II: Indications of use of anxiolytics

Medical illness for which patient was admitted	Anxiolytic used	Indications of use
Acute Myocardial Infarction	Alprazolam	Antianxiety
Breast cancer with metastasis	Alprazolam	Sleep disturbance
Ischaemic Heart Disease	Alprazolam	Antianxiety
CVA with hypertension	Alprazolam	Antianxiety
Rheumatic Heart Disease with Mitral Stenosis	Alprazolam	Antianxiety
Dialated cardiomyopathy	Alprazolam	Unknown
Acute Gastroenteritis	Alprazolam	Unknown
Unstable angina with pontine infarct	Alprazolam	Antianxiety
Atrial Fibrillation	Alprazolam	Prevent panic attack
Conversion disorder	Alprazolam	Unknown
Diabetic Ketoacidosis	Alprazolam	Unknown
diabetic nephropathy	Alprazolam	Unknown
hypothyroidism	Alprazolam	Unknown
Chronic Liver Disease	Alprazolam	Sleep disturbance
PSVT	Alprazolam	Antianxiety
AMI	Clonazepam	Antianxiety
NSTEMI	Clonazepam	Antianxiety
Hyperthyroidism	Clonazepam	Sleep disturbance, Antianxiety
Tremor, dystonia	Clonazepam	Antianxiety
Headache	Clonazepam	Unknown
Urinary tract infection	Clonazepam	Unknown
Chronic fibromyalgia	Clonazepam	Unknown
ACS with HF	Clonazepam	Decrease mortality
Snake bite	Lorazepam	Anticonvulsant
Hanging	Lorazepam	Anticonvulsant
Organophosphorous poisoning	Lorazepam	Anticonvulsant
CVA patients before MRI	Lorazepam	Claustrophobia anxiety prophylaxis
CLD	Lorazepam	Sleep disturbance
Ischaemic CVA	Diazepam	Anticonvulsant
Seizure disorder	Diazepam	Anticonvulsant

Table:III Indications of use of antidepressants

Medical illness for which patient was admitted	Name of antidepressant used	Indications of use
breast Cancer with metastasis	Amitriptyline	Depression
Hyperthyroidism	Amitriptyline	Unknown
Fibromyalgia	Amitriptyline	Depression
CVA	Amitriptyline	Depression
Myotonic muscular dystrophy	Amitriptyline	Chronic pain
Diabetes with hypertension	Amitriptyline	Painful diabetic neuropathy
Syncope with cervical spondylosis	Amitriptyline	Chronic pain
CLD	Amitriptyline	Depression
depression	Amitriptyline	Symptomatic improvement
Osteoarthritis	Amitriptyline	Chronic pain
Acid peptic disease	Amitriptyline	Unknown
GB syndrome with peripheral diabetic neuropathy	Duloxetine	Neuropathic pain
Fibromyalgia with hypertension	Duloxetine	Chronic pain
CVA	Duloxetine	Depression
Conversion Disorder	Esitalopram	Symptomatic improvement
Type 2 Diabetes Mellitus	Esitalopram	Diabetic neuropathy
Acid peptic disease	Esitalopram	Unknown
CVA	Sertraline	Improved functional recovery and prevention of post-stroke disorder
CLD	Sertraline	Cholestatic pruritus
Acid peptic disease	Sertraline	Unknown

Combination of antianxiety and antidepressant drug was prescribed in 7 patients diagnosed with breast Carcinoma with metastasis (amytriptilline, Alprazolam), hyperthyroidism (Clonazepam, amytriptilline), GB Syndrome with peripheral neuropathy (Arprazolam, Duloxetene), conversion disorder (Esitalopram, lorazepam),

chronic fibromyalgia (Amitriptyline, Duloxetine, Clonazepam)myotonic muscular dystrophy (Amitriptyline, Alprazolam)and CVA (Alprazolam, Duloxetene).
Potential drug interactions were found in22patients (4.26%).

Table: IVPotential drug interactions

Drugs prescribed	Potential interactions
Sertraline,Ciprofloxacin Sertraline, Ofloxacin Esitalopram, Levofloxacin Esitalopram, Ciprofloxacin Amitriptyline, Ofloxacin, Ondansetron	Increased QT interval
Esitalopram, Tramadol Amytriptiline, Tramadol Duloxetene, Tramadol Sertraline, Tramadol	Serotonin Syndrome
Alprazolam, Tramadol Clonazepam, Tramadol	Increased sedation
Amitriptyline, Alprazolam, Pregabalin, Diazepam	Respiratory depression, sedation
Levothyroxine &Amytriptiline	Increased CNS & CVS activity, arrhythmias

Discussion:
Alprazolam was the commonest prescribed antianxiety drug in patients with medical illness. Commonest medical illness in which alprazolam was prescribed include acute myocardial infarction (22.8%) followed by CVA with hypertension. In a previous study [1] Lorazepam was the commonest antianxiety agent used followed by Diazepam. The rationality of use of alprazolam in IHD, AMI, CVA, NSTEMI,PSVT was to treat anxiety. A previous study reveals Alprazolam exposure was significantly associated with reduced risk of Major Adverse Cardiovascular Events including ischemic stroke, hemorrhagic stroke, myocardial infarction, sudden cardiac death, and all-cause mortality. It was used in AF mainly to prevent panic attacks. [1] In UTI its use was somewhat irrational as it may increase the risk of urinary incontinence in elderly.[2] Also its use in patients with dyselectrolytemia proved to be of no benefit. The indication of use of Alprazolam in acute gastroenteritis, hypothyroidism, CKD and diabetic nephropathy is questionable. Alprazolam was also used in Conversion disorder as antianxiety drug though Lorazepam is preferred. The indications of use of Clonazepam were similar to Alprazolam except that it was used exclusively to treat headache/ migraine. The use of clonazepam in CLD is questionableas it may increase liver dysfunction as shown in some studies[4,5] ACS with HF it decreases mortality and may decrease pain in fibromyalgia. Lorazepam use was maximum prior to MRI to prevent claustrophobia anxiety. In patients of snake bite it acts as anticonvulsant. Diazepam is used as an anticonvulsant in seizure disorders and CVA. Similar results were seen in a previous study by Alam N et al [1]Among the antidepressants TCAs were the most widely prescribed drugs, (47%) followed by SSRIs (31%). SNRIs formed 21.5% of all antidepressant prescriptions. Previous studies show increasing proportions of patients receiving antidepressants without any psychiatric diagnosis [7-10].In a previous study by Grover S et al [6] SSRIs were most commonwhile TCAs were least common. In the present study, TCA use was indicated mainly for painful peripheral neuropathy in diabetic patients, as antidepressant and analgesic in fibromyalgia, for sleep disturbance in CLD and irritable bowel syndrome.Sertraline &Esitalopramwere the only SSRI prescribed. Esitalopram was prescribed in conversion disorder for symptomatic improvement but its use in dialated cardiomyopathyis debatable. [11] Sertraline was prescribed in chronic liver disease for cholestatic pruritus and studies show that it may contribute to improved functional recovery from acute ischaemic stroke and prevention of incident PSD in CVA patients.[8] Overall, SSRIs formed the bulk of the antidepressant prescriptions to patients with acid peptic disease. This finding was quite debatable because SSRIs are associated with gastrointestinal side effects such as nausea, vomitingand anorexia. There is also some concern about the risk of upper gastro-intestinal bleeding with SSRIs which increases with concomitant use of NSAIDs.[12]Similar results were seen in a study by Grover S et al.[6] The indications of use of antianxiety drugs were not clear in cases of Diabetic Ketoacidosis, diabetic nephropathy, hypothyroidism, UTI, hyperthyroidism, dyselectrolytemia, CKD, acid peptic disease. 7.2% patients were prescribed antianxiety drugs without any proper indications. Antianxiety drugs were prescribed without appropriate rationality in cases of hyperthyroidism, acid peptic disorder, CVA, diabetes. 7 patients (13.7%) received antidepressants without appropriate indications. Prescriptions with potential drug interactions were found in 22 patients (4.26%). TCA/SSRI prescribed along with fluroquinolones had the potential to increase the risk of QT prolongation.[13,14]. Concurrent prescribing of antidepressants with tramadol had chances to cause serotonin syndrome.[15]

Conclusion:

The present study suggests that antianxiety and antidepressant drugs though majorly used in psychiatric patients, also have a role to play in various medical illnesses. Their use with other medication accelerates the improvement of physical illness. But there are instances where use of these drugs continues long-time without any justifiable cause. Moreover, incessant prescription of antidepressant and anxiolytics may have the chance to cause drug interactions if not monitored adequately. In conclusion, in the present study 7.2% patients received antianxiety drugs and 13.7% received antidepressant drugs without appropriate indications. Combination of antianxiety and antidepressant drug was prescribed in 1.35% patients. 4.2% of the patients were prescribed drugs which had chances of potential drug interactions.

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