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Editorial

Afflicted memory with drugs

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1. Prologue

It is projected that the number of dementia sufferers worldwide will increase from 35.6 million to 36 % more by 2050. Decline in cognitive functioning is a core feature of dementias. This may be due to the changing lifestyle and frequent use of sedatives & other drugs commonly used in various ailments.

2. Analysis

Concerns have arisen where the drugs from various therapeutic groups have been used in various disorders causing significant memory loss over period of time.

The drugs causing anterograde amnesia, are benzodiazepines, such as alprazolam, bromazepam, clonazepam, lorazepam, prazepam and tetrazepam. Zolpidem has a great affinity for ω_1 sub type receptors which, are implicated in memory defects, thus any drugs which lead to CNS depression lead to memory deficit. Class of antidepressants, such as SRIs, such as fluoxetine and paroxetine, can induce disturbances in memory functions, such as short term memory. Pooled ten studies Meta-analysis has shown that Benzodiazepines (BDZ) significantly increases the risk of dementia in the elderly population. The risk is higher in patients taking BDZ with a longer half-life (>20 hours) and for a longer duration (>3 years). The use of short- or medium-term-acting BDZ, are

associated with higher risk of forgetfulness.

Impaired learning and memory, alterations in thought formation and expression, drowsiness, sedation, mood changes such as panic reactions and paranoia are commonly encountered with drugs like Ketamine Lysergic acid diethylamide (LSD) Methadone Methamphetamine (and Amphetamine) Methylendioxyamphetamine (MDMA, Ecstasy) Morphine and Heroin, Phencyclidine and Toluene.¹⁻⁴

University of California at Los Angeles have evaluated the usage of lipophilic statins—which include Atorvastatin, Simvastatin, Lovastatin and Fluvastatin,—appears to more than double those patients' risk of developing dementia compared with those who do not take statins. Telmisartan and Rosuvastatin Synergistically Ameliorate Dementia The results are conflicting as a pooled analysis of 36 studies found that statins were associated with a decreased risk of dementia. However FDA even added memory loss, or confusion, as a potential side effect on the label claim for all statins.

Beta-blockers are believed to cause memory issues by interfering with adrenergic transmission, norepinephrine and epinephrine. Beta-blocker therapy was independently associated with increased risk of developing vascular dementia, regardless of confounding factors Common side effects of Bisoprolol, include bradycardia, hypotension, fatigue, dizziness, depression, insomnia, memory loss and impotence.

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Opiate users suffer from generalized deficits in prospective memory, about 40% loss. (Visuospatial memory) regardless of the task demands, which may have significant implications for day-to-day functioning.^{5–8}

Diphenhydramine should be avoided in the elderly. Drowsiness, confusion, and memory loss have been well described with use of diphenhydramine. Treatment with 2nd or 3rd generation antihistamines may be associated with cognitive impairment, particularly in elderly patients. Cetirizine after single oral doses of 10 mg and 20 mg was found to impair speed of memory scanning and critical analysis, which may be due to action on central histaminergic receptors.

The Anti-epileptic drugs decrease in reaction speed, information processing speed, and concentration. The newer antiepileptic drugs show lesser cognitive side effects when compare to older drugs. Cognitive impairment caused by AEDs in children is more when compared to its effect in adults. Phenobarbital, leads to high risk serious cognitive effects impacting attention and memory, following long term use. Parkinson's drugs activate dopamine signaling pathways and are medications that may cause memory loss.

Chlomipramine, SSRI and Monoamine oxidase inhibitors, may contribute to the memory impairment in some patients, These drugs virtually abolish REM sleep Antidepressants may affect the risk of dementia by their different mechanisms of action, which may include anticholinergic actions and cytotoxicity in neurons.

3. Conclusion

Mentally retarded persons have a short-term memory deficit. Alcoholic Dementia is a serious condition caused by chronic alcoholism. Korsakoff syndrome is a chronic memory disorder caused by severe deficiency of thiamine (vitamin B-1) The severe memory impairment is for declarative memory. Polypharmacy with CNS depressants, leads to

increased incidence of adverse reactions, including loss of memory.


4. Conflict of Interest

None.

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