



Research Paper

## A Case of Lewy Body Dementia with Sensitivity to Aripiprazole Responded to Amisulpride

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### Abstract

A 65 year old subject presented to us symptoms suggestive of Lewy Body Dementia. On treatment with aripiprazole the symptoms worsened but was treated successfully with amisulpride. Such presentation and treatment response is not that common in clinical practice making it an unique scenario.

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### I. Case Report

A 65 year old male subject presented to our OPD with complains of behavioral abnormalities for last 6 months. He had increased worsening of symptoms over the course of time. Along with that, he had fluctuating worsening of intellectual ability and executive functioning for past 2 months. He claimed to be attacked by outsiders and left the house unannounced many times. Over the course, he developed resting tremor and slowness of movement for past 3 months. Blood investigations were within normal limits and he did not have any other comorbidities.

Mental State Examination revealed sad mood, persecutory ideas, visual hallucinations. Neurological findings were cog wheel rigidity in upper limbs, unsteady gait and resting tremors. Mini Mental State Examination revealed a score of 13/30. A diagnosis of Lewy Body Dementia was made as per Revised criteria for the clinical diagnosis of probable and possible dementia with Lewy bodies (DLB) (2017) [1]. He was started on aripiprazole 2.5 mg twice a day. Within a day patient became rigid, mute and was not responsive to commands. He was given intramuscular promethazine 1 ampoule stat. The rigidity reduced and patient became responsive. He was then started on Amisulpride 50 mg twice a day. Over next week, the hallucinations reduced. He was then placed on combination of levodopa and carbidopa (100 mg + 25 mg) twice a day. Parkinsonism features reduced after a week without worsening of psychosis and the patient was discharged on the same medications with addition of tablet Donepezil 11.5 mg.

There have been case reports of neuroleptic sensitivity to second generation antipsychotics in Lewy Body Dementia [2,3]. The pathophysiological mechanisms underlying neuroleptic sensitivity in LBD seem to be a 60-70% reduction in dopaminergic neurons in the substantia nigra, together with a failure to upregulate post-synaptic dopamine receptors in the striatum either in response to the dopaminergic deficit or to D2 blocking drugs [4,5].

### II. Discussion

The propensity to cause extrapyramidal symptoms among the second generation antipsychotics is less for amisulpride, [5] so we used this in our case. Though it has been used for controlling behavioral symptoms in Alzheimer's Dementia [6], its use in the context of Lewy Body Dementia is rare. In our case, despite the patient having sensitivity to aripiprazole, the patient improved drastically to amisulpride. Again, more action on 5HT<sub>2A</sub> receptors compared to D<sub>2</sub> receptors of amisulpride may explain the same [5,6,7,8,9]. There has been one case report where similar scenario as depicted and the patient had increased sensitivity to risperidone and was successfully treated with amisulpride [10].

Involvement of the NLRP3 inflammasome in different kinds of dementias provides new avenues to design drugs targeting NLRP3 inflammasome. To date clinical treatment of NLRP3 related diseases targets IL-1 with IL-1 antibodies or recombinant IL-1 receptor antagonist. But they are of low efficacy<sup>[11]</sup>. Pharmacological inhibitors specific to NLRP3 inflammasome may be the best choice for the treatment of NLRP3 related disease and it is suggested that second generation antipsychotics like amisulpride has pharmacological actions on these target receptors<sup>[11,12]</sup>. Still the exact mechanism is still under scrutiny.

### III. Conclusion

So, this is one of rare scenarios where amisulpride has been effective in a case of Lewy Body Dementia where patient had sensitivity to another agent of same class. Use of amisulpride in such cases should be encouraged.

**Ethical Concerns:** Due consent was taken from the patient regarding publication of the findings without revealing name.

### References

- [1]. Yamada M, Komatsu J, Nakamura K, Sakai K, Samuraki-Yokohama M, et al. (2020) Diagnostic criteria for dementia with Lewy bodies: updates and future directions. *J Mov Disord* 13:1-10.
- [2]. McKeith IG, Ballard CG, Harrison RW (1995) Neuroleptic sensitivity to risperidone in Lewy body dementia. *Lancet* 346:699.
- [3]. Ballard C, Grace J, Holmes C (1998) Neuroleptic sensitivity in dementia with Lewy bodies and Alzheimer's disease. *Lancet* 351:1032-10533.
- [4]. Owens DG (1994) Extrapyramidal side effects and tolerability of risperidone: a review. *The Journal of clinical psychiatry. J Clin Psychiatry* 55: 29-35.
- [5]. Carriere P, Bonhomme D, Lemperiere T (2000) Amisulpride has a superior benefit/risk profile to haloperidol in schizophrenia: results of a multicentre, double-blind study (the Amisulpride Study Group. *Eur Psychiatry* 15:321-329.
- [6]. Lim HK, Pae CU, Lee C, Lee CU (2006) Amisulpride versus risperidone treatment for behavioral and psychological symptoms in patients with dementia of the Alzheimer type: a randomized, open, prospective study. *Neuropsychobiology* 54:247-251.
- [7]. Ravindran NP, Halder A, Harshe D, Harshe S, Harshe G. A qualitative analysis of literature reporting and linking psychosis to COVID-19 infection. Findings from a postgraduate journal club. *Asian journal of psychiatry*. 2022 Jun 1;72:103099.
- [8]. Halder A, Ravindran NP, Naga D, Keshri S. Sertraline induced Stevens-Johnson syndrome-A case series. *Annals of Indian Psychiatry*. 2023 Jan 1;7(1):80-2.
- [9]. Halder A. Extrapyramidal Symptoms and Antidepressants-A Perspective. *international Journal of Science and Research (IJSR)*. 2024;12.
- [10]. Halder A, Ravindran NP, Nagda P, Joshi A. A Case of Lewy Body Dementia with Sensitivity to Risperidone Treated Successfully with Amisulpride. *J Dement*. 2023;7:148.
- [11]. Poh L, Fann DY, Wong P, Lim HM, Foo SL, Kang SW, Rajeev V, Selvaraji S, Iyer VR, Parathy N, Khan MB. AIM2 inflammasome mediates hallmark neuropathological alterations and cognitive impairment in a mouse model of vascular dementia. *Molecular psychiatry*. 2021 Aug;26(8):4544-60.