



Early Cataract Associated with Psychotropic Drugs: A Series of 12 Cases and Critical Review

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ABSTRACT

Published Online: June 24, 2026

Background: Psychotropic medications are widely prescribed for chronic psychiatric disorders and constitute an essential component of modern psychiatric management. Although their systemic adverse effects have been extensively investigated, ocular toxicity remains insufficiently characterized. Phenothiazines have historically been implicated in lens opacities, while the association between newer psychotropic agents and cataract formation remains controversial.

Objective: To describe a series of patients presenting with early cataract under chronic psychotropic treatment and to critically review the available literature regarding the potential role of psychotropic medications in cataractogenesis.

Methods: A descriptive observational study was conducted involving 12 psychiatric patients receiving long-term psychotropic therapy who presented with progressive visual impairment. Demographic characteristics, psychiatric diagnoses, duration and type of psychotropic exposure, cataract morphology, and associated risk factors were analyzed.

Results: The median age was 52 years and the female-to-male ratio was 1.4. The average duration of psychotropic exposure was five years. The most frequently prescribed medications were levomepromazine, olanzapine, and fluoxetine, administered either alone or in combination. Ophthalmological examination revealed posterior subcapsular cataracts, cortico-nuclear cataracts, and total white cataracts. No major conventional cataract risk factors were identified in most patients.

Conclusion: Our findings support the hypothesis that chronic exposure to psychotropic medications may contribute to accelerated cataractogenesis. Regular ophthalmological monitoring should be considered in patients receiving long-term psychotropic therapy. Further prospective studies are required to establish causality.

KEYWORDS:

Psychotropic drugs, Cataract, Early cataract, Antipsychotics, Ocular toxicity, Lens opacity.

INTRODUCTION

Cataract remains the leading cause of reversible blindness worldwide and represents a major public health challenge. Although age-related cataract is the most common form, several systemic diseases, environmental exposures, and medications have been implicated in premature lens opacification.

Psychotropic medications are among the most frequently prescribed drugs globally. Their use has increased considerably during the last decades owing to the growing prevalence and recognition of psychiatric disorders.

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**Cite this Article: Bouhazzama, N., Laabi, I., Daghoulj, G., Allali, B., Elkettani, A. (2026). Early Cataract Associated with Psychotropic Drugs: A Series of 12 Cases and Critical Review. International Journal of Clinical Science and Medical Research, 6(6), 253-255. <https://doi.org/10.55677/IJCSMR/V6I6-17/2026>*

While metabolic, cardiovascular, and neurological adverse effects are well recognized, ophthalmic complications remain less thoroughly investigated.

Among psychotropic agents, phenothiazines have historically been associated with ocular toxicity. Lens pigmentation, corneal deposits, retinal abnormalities, and cataract formation have been described following prolonged exposure. More recently, isolated reports have suggested a possible association between atypical antipsychotics and antidepressants with cataract development.

The biological mechanisms underlying these observations remain incompletely understood. Oxidative stress, direct lens toxicity, photosensitization, and metabolic disturbances induced by psychotropic medications have all been proposed. The present study describes a series of 12 patients presenting with early cataract during chronic psychotropic therapy and

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discusses current evidence regarding the relationship between psychotropic drugs and cataractogenesis.

MATERIALS AND METHODS

Study Design

A descriptive observational study was conducted at the Department of Ophthalmology of Hôpital 20 Août, Casablanca.

Inclusion Criteria

Patients were eligible if they fulfilled the following criteria:

- Chronic psychotropic treatment.
- Progressive decrease in visual acuity.
- Presence of clinically significant cataract.
- Availability of complete ophthalmological records.

Data Collection

The following variables were collected:

- Age.
- Sex.
- Psychiatric diagnosis.
- Type of psychotropic medication.
- Duration of exposure.
- Associated cataract risk factors.
- Visual acuity.
- Slit-lamp examination findings.

Ophthalmological Assessment

All patients underwent:

- Best corrected visual acuity assessment.
- Slit-lamp biomicroscopy.
- Dilated fundus examination whenever feasible.

Cataracts were classified according to their predominant morphology.

RESULTS

Demographic Characteristics

Twelve patients fulfilled the inclusion criteria.

The median age was 52 years, which is younger than typically expected for age-related cataract development. Female patients represented the majority of the study population.

Psychotropic Exposure

The average duration of psychotropic exposure was approximately five years.

The medications most frequently prescribed included:

- Levomepromazine.
- Olanzapine.
- Fluoxetine.

Several patients received combined therapy involving two or more psychotropic agents.

Ophthalmological Findings

Different cataract morphologies were identified:

Posterior Subcapsular Cataract

Posterior subcapsular cataract represented one of the most frequent patterns observed. This form is known to be associated with medication-induced lens changes.

Cortico-Nuclear Cataract

Advanced cortico-nuclear cataracts (Grade III-IV) were observed in several patients and were associated with significant visual impairment.

Total White Cataract

Some patients presented with advanced total white cataracts requiring surgical management.

No alternative explanation for premature cataract development was identified in the majority of cases.

DISCUSSION

The association between psychotropic medications and cataract formation has attracted increasing attention over recent decades.

Evidence Regarding Phenothiazines

Phenothiazines remain the psychotropic class most strongly associated with cataract formation. Several epidemiological studies have demonstrated increased cataract prevalence among chronically exposed patients.

Experimental investigations suggest that these medications may accumulate within ocular tissues and induce phototoxic reactions resulting in oxidative damage.

Antipsychotics and Cataract

The relationship between atypical antipsychotics and cataract remains controversial.

Olanzapine has been implicated in isolated case reports describing premature cataract development. However, large epidemiological studies have yielded inconsistent results.

Antidepressants and Cataract

Several studies have explored a possible association between selective serotonin reuptake inhibitors and cataract formation. Although some authors reported increased risk, others failed to confirm these observations.

Potential Mechanisms

Several biological pathways may explain psychotropic-induced cataractogenesis:

Oxidative Stress

Psychotropic drugs may increase oxidative damage within lens fibers, accelerating protein denaturation and opacification.

Metabolic Effects

Many psychotropic medications induce weight gain, insulin resistance, and glucose metabolism disturbances that may indirectly contribute to cataract formation.

Direct Lens Toxicity

Drug accumulation within lens tissues may directly alter lens transparency.

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Clinical Implications

Although causality cannot be definitively established from this case series, our findings highlight the importance of regular ophthalmological surveillance in patients receiving long-term psychotropic therapy.

Early detection may facilitate timely management and prevent significant visual disability.

Limitations

Several limitations should be acknowledged:

- Small sample size.
- Absence of control group.
- Observational design.
- Potential residual confounding factors.

Consequently, the present study should be considered hypothesis-generating.

CONCLUSION

Early cataract may represent an underrecognized complication of chronic psychotropic treatment. Ophthalmologists and psychiatrists should remain aware of this potential association.

Regular ocular monitoring may be beneficial, particularly among patients exposed to psychotropic medications for prolonged periods.

Future multicenter prospective studies are necessary to clarify the role of psychotropic drugs in cataractogenesis.

Funding Statement

The authors received no financial support for the research, authorship, and/or publication of this article.

Conflict of Interest

The authors declare no conflict of interest.

Ethical Approval

The study adhered to the principles of the Declaration of Helsinki. Patient confidentiality was strictly maintained.

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