

## Comment to: Effect of lanosterol on human nuclei

Sir,

We read with interest the recent study titled "Effect of lanosterol on human cataract nucleus" by Shanmugam *et al.*<sup>[1]</sup> The study was based on the novel research idea by Zhao *et al.*<sup>[2]</sup> which concluded that lanosterol reverses protein aggregation in the cataractous lenses of rabbits and dogs. In their study, Shanmugam *et al.* concluded that lanosterol has no role in reversing the cataractous changes on human nuclei. However, there are a few points; we would like to highlight.

- Hejtmancik and Kantorow<sup>[3]</sup> have clearly described the different mechanisms of cataract formation in congenital and acquired cataracts in humans. Mutations in enzymes such as lanosterol synthase and mutations that destabilize the lens proteins lead to increased protein aggregation and cataract formation in congenital cataracts. In age-related senile cataracts, a variety of biochemical and physical insults lead to changes in the lens proteins, increased protein aggregation, and cataract formation. Thus, studying the effect of lanosterol on the reversal of cataract would be more beneficial in cases with congenital or pediatric cataracts
- In age-related senile cataracts, the density of the nuclear cataract is directly proportional to the protein aggregation within the crystalline lens. Hence, the time duration for which the nuclei needs to be immersed in the lanosterol solution to achieve cataract reversal would be different for different nuclear density. In this study, all the nuclei were immersed in the lanosterol solution for 6 days irrespective of the density and type of cataract
- Removing the lens epithelium and capsule leads to progression of the cataractous changes in the human lens. Thus, in this study, the progression of the cataract was noted in both the lanosterol group and control group. Different biochemical changes in the lens both *in vivo* and *in vitro* would have an effect on the outcomes.

To conclude, factors such as immersion of the intact lenses with capsule, cases with similar nuclear density or increasing the time duration of immersion in the lanosterol solution, and studying the effect of lanosterol in patients with congenital or pediatric cataracts may result in positive outcomes.

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Nil.

### Conflicts of interest

There are no conflicts of interest.

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