

Distinct Aqueous Humor Soluble Factor Profile in Patients with Different Grades of Cataract



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INTRODUCTION

- Cataract is caused by cytokines and chemokines that damage lens epithelial cell DNA.
- This study endeavors to correlate them with various grades of cataract by analyzing their aqueous humor concentration

OBJECTIVES

To determine the relationship between Aqueous humor (AH) soluble factor profile and grades of cataract.

MATERIALS & METHODS

GROUP 1

Undergoing cataract extraction, no systemic illness (cataract CT n=78)

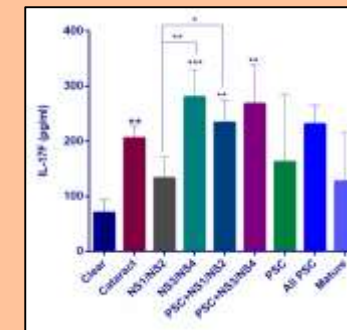
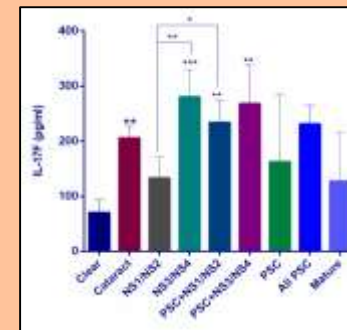
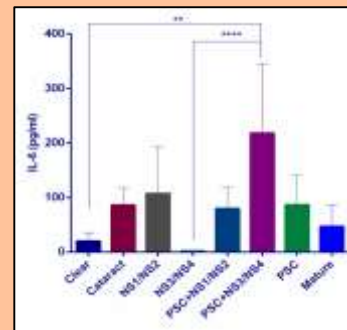
No cataract (Controls clear n=18)

GROUP 2

- Nuclear sclerotic cataract (**NS1-5, n=38**), Posterior subcapsular cataract (**PSC, n=34**), Mature cataract (**MC, n=4**), and Cortical cataract (**CC, n=2**).

- Aqueous humor (AH) was collected by anterior chamber paracentesis during an indicated surgery and stored at -80°C until further use.
- Flow cytometry based multiplex ELISA (Cytometric bead array, CBA) was used to measure the levels of 39 different soluble factors in the AH.

RESULTS



Significant findings include

- ✓ IL-6, IL-17F*, MIG(CXCL9), VEGF* and Angiogenin were higher (*P<0.05) in CT subjects compared to clear (non-cataract).
- ✓ There were significantly higher levels of IL-17F and VEGF in PSC with NSC rather than with either PSC or NSC compared to NC.

CONCLUSION

- Altered levels of specific AH soluble factors were observed in group 1 (cataract) and more specifically they were more marked in PSC with NS.
- Studying the causal role of these factors would be beneficial in understanding cataractogenesis and its management.