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**Visual outcome, contrast sensitivity and chromatic discrimination after implantation of single and three-piece IOLs of different materials (hydrophilic acrylic plain, silicone plain and yellow, hydrophobic acrylic yellow)**

Purpose:

To evaluate contrast sensitivity and visual outcome of yellow lenses compared to clear lens as well as the reduction of blue object visual acuity of yellow lenses by determination of blue chromatic discrimination.

Venue:

Hi- Tech Eye Surgery Center, Vadodara, India.

Methods:

We implanted four different models of IOLs (Dr. Schmidt Intraocularlinsen/HumanOptics MS 5812 AS, MS612, MS612Y and Alcon, Acrysof natural) in groups of 30 eyes each at our center. Phaco with 2.8 mm corneal temporal incision was performed in all cases, . capsulorhexis size was 5.5 to 6 mm. MS612 and, MS612Y were implanted by holder/folder forceps after enlarging incision to 3.2 mm, the Acrysof was implanted by injector system after enlarging incision size to 3.2mm. AS lens was implanted by injector system without enlargement. Follow-ups were done at 4 weeks, 3 months and 1 year. Visual acuity was measured with snellen chart. Contrast sensitivity was measured with Sine Wave Contrast test. Blue color chromatic discrimination was measured with same size blue letters with diminishing intensity of blue and patients were asked to recognize the letter.

Results:

Visual acuity did not differ significantly( $P>0.05$ ) between the IOL groups Contrast sensitivity was not different between lens groups for low spatial frequencies, but is significantly( $P<0.05$ ) better for yellow lens for higher spatial frequencies. Blue chromatic discrimination did not differ significantly( $P>0.05$ ) between the IOL groups.

Conclusion:

Yellow lens has better contrast sensitivity at higher spatial frequencies and no effect on chromatic discrimination for blue color. So yellow lens is better choice although the effect on AMD is proven or not proven.