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Abstract Information

Abstract Title:

The changes of aqueous humor pH values after anterior chamber paracentesis in patients with acute angle closure glaucoma

Purpose:

To study the changes of aqueous pH values and visual outcomes after anterior chamber paracentesis in patients with acute angle closure glaucoma.

Design:

Prospective non-comparative case series

Participants:

Twenty-two consecutive angle closure glaucoma patients with their first acute attack and intraocular pressure greater than 35 mmHg were recruited into the study.

Main Outcome Measures:

Aqueous humor pH values, intraocular pressure, pupil size and visual acuity after anterior chamber paracentesis

Methods:

On presentation, twenty-two patients with acute angle closure glaucoma underwent examinations included visual acuity, pupil size and intraocular pressure. Then, anterior chamber paracentesis was done to obtain 0.1mL aqueous humor for pH value determination by pH meter. The visual acuity, pupil size and intraocular pressure at 5 and 30 minutes, and at 1, 2, 3, 12 and 24 hours were then followed.

Results:

At presentation the mean intraocular pressure in the affected eye was 62.4 mmHg. The visual acuity was 6/60 or worse in 73% of patients. The mean pupil size was 7.8 mm. Immediate after paracentesis, the mean intraocular pressure dropped to 6.2 mmHg. The mean aqueous humor pH value in patient with presenting intraocular pressure between 35 to 45 mmHg is 7.23 (n = 6) ; in patients with presenting intraocular pressure between 46 to 55 mmHg is 7.12 (n = 4) ; and in patients with presenting intraocular pressure greater than 56 mmHg is 6.82 (n =12) . Thirty minutes after anterior chamber paracentesis, all the patients had visual acuity greater than 6/30. The mean pupil size was 5.4 mm thirty minutes after paracentesis.

Conclusion:

In this series, anterior chamber paracentesis seems to restore visual acuity and reduce intraocular pressure effectively in patients with acute angle closures glaucoma. In addition, the higher the presenting intraocular pressure, the lower the aqueous humor pH value can also be noted.