ABSTRACT

Demography, Clinical Features, Etiology, Management and Outcomes in Acute Retinal Necrosis: A Prospective Study.

INTRODUCTION: A prospective study of demography, clinical features, etiology, management and outcomes in Acute retinal necrosis (ARN)

METHODS: Prospective, observational, hospital based case series study of ARN patients reported for 1 year and a follow up period of six months. Demographic profile, immune status of the patients recruited was recorded. Relevant history, initial visual acuity, clinical feature documented. Patient was diagnosed to have ARN if had feature as suggested by standard diagnostic criteria proposed by American uveitis society. Few patients underwent vitreous tap for viral DNA analysis through PCR. Patients are treated with oral antiviral as sole antiviral or combined antiviral therapy with intravenous, intravitreal and orally along with corticosteroids and cycloplegics. Occurrence Complication like retinal detachment, secondary glaucoma and fellow eye involvement was documented. Management of complication was also documented. Final visual acuity at the end of six month follow up period was noted.

RESULTS: This study enrolled total of 29 patients and 31 eyes. Out of the 29 patients 1 patient died during the follow up period and 1 patient lost follow up.
Therefore for end point observations results are calculated with 27 patients and 29 eyes. Minimum age of presentation was 18 years and maximum was 65 years. Mean age was 42.1 years. Totally 5 patients out of 29 patient are immunocompromised. Previous history of viral infection was given by 6 patients (20.7%). The most common viral infection being chicken pox seen 3 patients (50%). Most common symptom found was defective vision (100%). The mean clock hours of retinal necrosis observed was 5.12 clock hours. Vitreous sample of 11 patients was analyzed for herpes family virus through polymerase chain reaction, Varizella zoster was detected in 2 patients (18.18%) and in 9 patients no organism could be detected. Out of total 31 eyes, 17 eyes(55%) treated with sole oral antiviral and 14 eyes (45%) treated with combined antiviral therapy. 34.4% (10 eyes) suffered retinal detachment. Mean time gap of occurrence of retinal detachment was found to be 4.2 weeks. Occurrence of retinal detachment in combined therapy 69.3% (9 eyes out of 16 eyes) and in oral antiviral therapy group was 6.25% ( 1 out of 16 eyes). There exist a statistical significance (P= 0.001) in occurrence of retinal detachment between oral therapy group and combined antiviral group. Retinal detachment occurred in 28.6% eyes ( 2 eyes) on silicon oil removal. 10% progressed to secondary glaucoma. 2 patients out 29 had fellow eye involvement, with mean time gap of involvement being 2.5 weeks. The over all mean initial acuity in 31 eyes was 0.96LogMar±0.70 (1SD), mean final visual
acuity in 29 eyes was 0.69LogMar±0.60 (1SD). On analysis if was found there exist a statistically significant (P=0.002) improvement in vision at the end of six months of treatment. The mean initial visual acuity in oral antiviral therapy group was 0.79LogMAR±0.57 (1SD) and mean final visual acuity was 0.46±0.26 LogMar. A statistically significant (P=0.006) improvement in visual acuity between initial and final vision in oral therapy. No statistical significant (P=0.183) improvement in visual acuity was noted between initial (mean= 1.16LogMar±0.81 (1SD)) and final visual acuity ( mean 0.99±0.76 LogMar) in combined antiviral therapy group. There exists a statistical significant difference (P=0.026) between final vision between oral antiviral and combined antiviral group with oral antiviral therapy group had better final visual acuity.

CONCLUSION: Acute retinal necrosis is rare but potential blinding disease, polymerase chain reaction on ocular fluids helps to identify viral DNA and appropriate treatment can be instituted. Oral antiviral and intravitreal antiviral are increasingly used in treatment of ARN. Primary treatment with oral antiviral for indolent ARN is an effective alternate to combined therapy as the later is invasive and requires hospitalization. Prompt diagnosis and good therapeutic approach is a must for better visual recovery. Vision threatening complication like retinal detachment can be prevented with judicious monitoring of ARN patients and prompt treatment. Despite, advances in treatment and diagnostic modalities
available like polymerase chain reaction (PCR) to identify virus with intraocular fluid, ARN continues to remain as an ophthalmological emergency with retinal lesion progressing rapidly after the disease onset. Precise understanding about this disease condition by ophthalmologist is at most important for prompt diagnosis and treatment.
KEY WORDS

- ACUTE RETINAL NECROSIS (ARN)
- ANTIVIRALS
- ACYCLOVIR
- COMBINED ANTIVIRAL THERAPY
- GANCYCLOVIR
- HERPES FAMILY VIRUS
- IMMUNOCOMPETENT
- IMMUNOCOMPROMISED
- INTRAVITREAL
- INTRAVENOUS
- ORAL ANTIVIRAL THERAPY
- POLYMERASE CHAIN REACTION (PCR)
- RETINAL NECROSIS
- RETINAL DETACHMENT
- VALACYCLOVIR
- VISUAL ACUITY