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WHITE SENILE CATARACTS: INTERMEDIATE ASSESSMENT OF IMPACT OF VISION 2020-THE RIGHT TO SIGHT PROGRAM IN RURAL NORTHERN INDIA

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KEYWORDS :

INTRODUCTION:

Worldwide cataract is the leading cause of avoidable blindness.[1] In India according to a survey, blindness due to cataract accounts for over seventy percent of avoidable blindness.[2]The goal of vision 2020 program is elimination of avoidable blindness.[1]Since cataract is major cause of avoidable blindness in developing countries like India, the key to success of vision 2020 initiative lies in addressing cataract blindness.[3] India is the signatory of vision 2020 program, initiated by World Health Organization (WHO) in 1999. The latest reports assessing impact of the program in India indicate increase in number of cataract surgery rate.[4]The cataract surgery rate (CSR) is the number of cataract surgeries per million populations per year. CSR is an important quantitative measure of cataract surgical service delivery within defined population. However, CSR only partly measure the impact of a program designed to eliminate the avoidable blindness. Another indicator, which measures proportion of persons receiving cataract surgery of the eligible visually impaired individuals, is cataract surgical coverage (CSC). CSC serves as an indicator to measure the extent to which services have covered the need of the population.[5] Most of the published literatures assessing impact of vision 2020 program have focused on CSR, and only few have dealt with CSC.[6,7]Senile cataracts turning white are consequence of normal maturity process of crystalline lens, and often considered as resultant of delayed cataract surgery. Their prevalence in community is an indirect indicator of impact of program targeting blindness due to cataract. The study was aimed to determine hospital based incidence of white senile cataracts and to find causes for delay in uptake of cataract surgery.

MATERIALS AND METHODS:

The prospective study was conducted in ophthalmology department of Maharaja Agrasen Medical College, Agroha; situated in rural area of western Haryana, in northern India. The study was approved by the institutional ethical committee and adhered to the declaration of Helsinki. The study included newly diagnosed patients of senile (Aged 50 years and above) cataract. All these patients underwent detailed clinical ocular examination by faculty members of the department. The cataract was graded based on morphology, maturity and grades of nuclear sclerosis.[8,9] Patients with unilateral or bilateral white cataract were selected for inclusion in the study. The white cataract was defined as presence of white lenticular reflex in pupillary area on torch light or slit lamp examination and visual acuity limited to perception of light (PL). Written consent was taken from the patient or patient's attainder for participation in study. The information about education status, profession and annual income was gathered. Patients or patient's attainder were specifically asked for any previous advise or prescription for cataract surgery, and reasons for delay in cataract surgery. The reasons for delay in cataract surgery were grouped under four heads, namely-socio-cultural, psycho-physiological, economic and medical. The responses for delay in cataract surgery were recorded in patient's vernacular, and then placed under appropriate group. The data was compiled and entered in excel sheet (MS Office; Microsoft Corp. USA) as categorical data. The correlation between demographic variables of age, education status, profession and annual income with delay in cataract study was done by logistic regression. The reasons for delay in cataract surgery were analyzed using descriptive statistics.

RESULTS:

A total of eight hundred and eleven patients, fifty men (42%) and sixty-nine (58%) women underwent cataract surgery between April 2014 and March 2017. The mean age was 61±8 years (Range 50-82 years). Fifty-three (45%) patients were illiterate; forty five (38%) below secondary and twenty one (17%) patients were educated above senior secondary level. Thirty-one (62%) men were agriculturist and fifty-six (81%) women were home maker. For females, the odds ratio of white cataract at time of presentation for cataract surgery, compared to males, was 0.44 (95% CI: 0.30-0.65). Illiteracy was significantly associated with delay in electing cataract surgery ($p < 0.05$).

The white senile cataract was detected in 119 (14.6%; 95% confidence interval (CI):12-16%) cases, of which ten (8%; 95% CI) had bilateral white cataract. Six (5%; 95% CI) patients had lens related glaucoma at presentation. Twenty-two (18%; 95%CI) patients pseudophakia in fellow eye, and three had aphakia.

Socio-cultural factors were leading causes for delay in uptake of cataract surgery, noted in forty-nine (41%; 95% CI: 40-57) patients, followed by psycho-physiological in thirty-eight (32%; 95%CI: 24-40), economic in 32 (27%; 95%CI: 19-35), and medical in eight (7%; 95%CI: 3-12) patients.

DISCUSSION

Incidence of white cataract among those diagnosed with senile cataract was approximately fifteen percent in our study. Since in normal course of senile lenticular changes, white cataract represents delayed stage of maturity. These cataracts are associated not only with functional blindness but may also pose surgical difficulties. In our study eight percent of such patients had bilateral total cataracts and five percent presented with lens related glaucoma. Although, globally the CSC is close to eighty five percent, but CSC does not determine if patient was visually blind or impaired.[7,10]The vision 2020 initiative has resulted in increase in CSC and CSR but perhaps community-based awareness and education about cataract need to be addressed. Illiteracy was significantly associated with delayed cataract surgery in our study. Higher prevalence of disease and lack of treatment has been correlated with illiteracy.[11]

Delay in cataract surgery was more likely for women. The gender gap in CSC disfavoring women has been reported in developing countries.[12, 13]The reason for higher proportion of women delaying cataract surgery could be related to social and/or economic dependency.

Interestingly main reasons for delay in cataract surgery in our study were socio-cultural and not economic. The probable reason for predominance of socio-cultural reason could relate to age and gender composition of study group. In developing countries like India; persons in age group requiring surgery for senile cataract are often dependent on family members for escorting to hospital. Economic and social dependency is known to delay the cataract surgery.[14] Economic reasons ranked third, perhaps due to high per capita income of state of Haryana.[15] Another important cause for delay in electing cataract surgery was health related problems, of which uncontrolled diabetes mellitus was important. Systemic diseases may lead to postponement of elective surgical procedures.[16]

Our study results implicate that despite higher CSC and CSR, cataract continue to be important cause of avoidable blindness. Addressing local barriers and educating mass about cataract surgery may lead to early uptake of cataract surgery. Our study is not without limitation.

Since it was a hospital-based study, it does not reflect the prevalence of white cataracts in population. Secondly, the reasons for delay in electing cataract surgery were based on subjective responses. Despite limitation, this study suggests that vision 2020 should have strategies to address local barriers so every individual have right to sight against blindness due to cataract.

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