

## Retinal Diseases Pattern and Prevention of Blindness in Nepal

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Retinal diseases are the emerging cause of blindness in low resource countries [1]. Retinal diseases have been the leading cause of blindness in Nepal. Population based survey conducted in 1981 reported retinal diseases as the third leading causes of blindness in Nepal after cataract and its sequelae [2]. Population based studies conducted after this national survey showed retinal diseases as the second major cause of blindness after cataract [3,4]. A rapid assessment of blindness conducted in 2010 had reported posterior segment problems as the second common cause of blindness, again first being the cataract [5].

Bhaktapur Glaucoma study was conducted in Bhaktapur district of Nepal, to assess the prevalence, pattern and risk factors of glaucoma from 2007 to 2010. The study subjects also subjected for detailed retinal examination. In this study, series of the study revealed cataract as the leading cause of blindness followed by retinal disorders. Among the subjects who underwent cataract surgery, retinal disorders were the most common cause of blindness [6,7]. The Bhaktapur Retina Study (BRS), an epidemiological study of retinal diseases, was conducted on the same Bhaktapur district of Nepal focused primarily to assess the various retinal diseases and their risk factors in the population. Retinal diseases were found as the second major causes of blindness after cataract. Retinal diseases were the first major cause of blindness among the pseudophakic subjects [8].

Overall prevalence of retinal diseases was 5.35% at the age 40 years and above in BGS [7]. Age related macular degeneration (AMD) and retinal vein occlusion (RVO) were the leading cause of retinal disorders. The recent study, the BRS, showed the prevalence of retinal disorders in 52.4% of subjects at the age 60 years and above. The involvement was bilateral in almost two third of subjects. AMD, hypertensive retinopathy, epiretinal membrane, RVO and diabetic retinopathy (DR) were the major retinal disorders.

On the other hand, awareness on major blinding retinal diseases is low in the population. In BRS, we found only 7.5% of sub-

jects were aware of AMD and its risk factors and protective factors. Similarly, only 11.5% of study subjects were aware of DR and 40% of subjects with diabetes were aware of DR [9]. Other studies conducted among the diabetic population revealed almost 50% were aware on DR [10,11]. The life expectancy has been improved over the years and there has been control of communicable diseases but non-communicable diseases such as cardiovascular diseases and diabetes mellitus have been the major cause of morbidity and mortality [12,13]. On the other hand, there is limited trained human resource, limited facilities for tackling retinal diseases in Nepal. These factors would lead to increase in retinal diseases in the future.

Retinal diseases are asymptomatic in majority of subjects and can lead to irreversible visual impairment on delayed treatment. The studies conducted revealed moderate to substantial agreement on retinal diseases analysis by the allied ophthalmic personnel at the primary eye care center [14,15].

The high prevalence of retinal diseases, low awareness on major blinding retinal diseases in the population and high risk groups warrants the prompt attention for awareness campaigns, retinal diseases screening, using allied ophthalmic personnel and allied medical personnel using fundus cameras, proper referral network to tertiary eye hospitals, , cross referral with the physician for diseases like diabetes, and hypertension and facilities for treatment of these diseases are required for the prevention of avoidable blindness from these major retinal disorders.

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