Glaucoma Research Society

NEW STRATEGY FOR GLAUCOMA TREATMENT

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Background: Recently the 2002 population-based Japanese glaucoma prevalence survey showed the estimated prevalence of glaucoma was 5.8% for all types of glaucoma in individuals over 40 years of age in Tajimi Japan. The glaucoma prevalence rose to 7.9% in the over-60 age group. This study was done to investigate the possible association of glaucoma and senile dementia in aging Japanese.

Design: Cross-sectional human genetic survey and tissue culture study

Participants: One hundred Japanese with dementia

Testing: Participants were tested for glaucoma and apolipoprotein genes.

Main Outcome Measures: Prevalence of glaucoma in dementia and abnormal apolipoprotein genes.

Results: We found a prevalence of glaucoma of > 20% among Japanese with dementia. Additionally, because of the possibility of neuroprotection in glaucoma treatment, we studied the mechanism of glutamate-induced cell death using cultured rat retinal ganglion cells (RGC). Neuroprotective effects of erythropoietin and other agents were demonstrated in cultured RGCs. Some of these agents could affect endoplasmic reticulum stress (ER stress) pathways.

Conclusions: Our study alerts ophthalmologists as to the frequent association of glaucoma and dementia.

Updated: March 11, 2008 12:55 PM AST