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Comment on: Management of ocular hypertension: a cost-effectiveness approach from the Ocular Hypertension Treatment Study Kymes et al (AJO 2006;141:997–1008)

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Dr. Rosenbaum thoughtfully reminds us that use of health care resources, whether public or private, is not worthwhile unless there is corresponding benefit. This matches our primary message---that the economic and non-economic benefit of treatment outweighs the burden of treatment for a substantial minority of people with ocular hypertension, but not all.¹

In his review of a case-series from his practice, Dr. Rosenbaum found that his clinical intuition of risk and benefit led him to place approximately 1/3 of his 36 patients who met the OHTS criteria on treatment. Using the quantitative and rigorous method of decision analysis, we estimated that the optimal use of social resources occurs when a threshold of 2% or more annual risk of developing glaucoma (a five-year risk in excess of 10%) is used to determine which patients are offered treatment.¹ Interestingly, we found that in the OHTS cohort this represented approximately one-third of those with IOP $\geq$ 24 mm Hg in at least one eye that the time or enrollment.

Dr. Rosenbaum's clinical judgment led him to select an IOP of greater than 30 mm Hg to identify who would benefit from medical treatment. While IOP has long been used as the primary indicator of risk of conversion to glaucoma, data from OHTS allows consideration of other influential factors such as vertical-cup/disc ratio, corneal thickness, age, and pattern standard deviation.² This provides an increase in predictive accuracy, reducing the number of patients subjected to unnecessary treatment, while increasing the likelihood of treatment of those most likely to benefit.

The purpose of the decision analysis approach is to weigh explicitly the components of the cost and benefit of treatment from a particular perspective.³ As it is the patient (and/or society) who experiences the monetary (and non-monetary) costs and benefits of treatment, it follows that the decision to treat should reflect these costs and benefits from that perspective.⁴ These values include factors such as reassurance afforded by preventive treatment, nuisance or aversion to use of medications, impact on family and job of visual difficulty, time lost for office visits, and side effects. While some may view our methods as complex, they allow us to quantify, compile and compare these factors to determine the optimal decision on a population basis. For the clinician caring for an individual patient, these methods provide guidance concerning those

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factors that most influence the patient's decision concerning treatment, thus providing guidance in advising the patient concerning treatment options.

Economic evaluation has much to offer clinicians in determining the most effective care for their patients. We appreciate the thoughtful consideration by Dr. Rosenbaum, as it will contribute to improved understanding for all of the limitation and promise of these methods.

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