The many guises of uveitis associated with JIA

James T Rosenbaum, Justine R Smith

The severity of uveitis... can help us predict prognosis of juvenile idiopathic arthritis

Sometimes improved prognosis is a mirage induced by early detection. The prognosis for uveitis associated with JIA would mistakenly appear improved if more vigilant screening in 1998 allowed the ophthalmologist to diagnose the child with a mild cellular response in the anterior chamber that was destined to disappear regardless of treatment, while this same scenario in 1982 did not come to the attention of an ophthalmologist. Shifting diagnostic criteria may also explain an apparent change in disease prognosis over time. The term "juvenile idiopathic arthritis," was coined by the International League Against Rheumatism Task Force for Classification Criteria in 1997, when recognising the inadequacy of previous terminology, it developed a system for classification of childhood arthritis. This umbrella term acknowledges that different forms of arthritis are subsumed within it. Despite revision in 1997, the system continues to receive criticism and further revision is suggested. Further, it is clear that clinicians and scientists remain confused in the classification. For example, one might argue that in the study by Edelsten and co-workers, patients classified as "non-standard" because they had uveitis associated with psoriatic arthritis did, in fact, belong to the "standard" group, if psoriatic arthritis is considered a form of JIA as recommended by current classification criteria.

Edelsten and colleagues appropriately recognise the limitations of their study. Extrapolations to an individual practice must be made cautiously if the physician has a different threshold for initiating methotrexate, if follow up visits are scheduled less frequently, and if the definition of "severe disease" varies from that used in this report. Prognostic information is always based on probability. Patients are rarely interested to learn that the probability of blindness is 6%, if the unfortunate individual in the examination chair today is that unlucky one person out of 17.

With the publication of this report by Edelsten and co-workers, we know more about prognosis of JIA associated uveitis than we ever have before. We also know that we have much more to learn about this eye disease.

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References
Corneal transplantation

Outcome of corneal transplantation

Melissa M Brown, Gary C Brown

Value based ophthalmology

In their article in this issue of the BJO (p 57) Saunders and colleagues describe a methodology by which they evaluate the visual health state of patients with severe corneal disease requiring transplantation surgery. Rather than dealing with visual acuity as the only preoperative and outcome parameter, they evaluate patients according to three criteria: (1) visual acuity, (2) ocular pain, and (3) visual function. Concerning the latter criterion, visual function, they utilise a tool called the VFA (visual function assessment), which they have previously described; it is essentially a modification of the VF-14 and predominantly measures ocular function characterised by the ability to perform tasks such as driving, reading, cooking, etc. They found that patients who had a high preoperative priority score, as measured by the three above criteria, were more likely to have a good outcome. One measure in the study that is somewhat unclear, though, is how the results incorporate vision in the eye that did not receive a transplant. All too often our clinical trials and other studies fail to address the status of the second eye, perhaps a factor more important to the patient that the ocular intervention itself. The authors note that 72.4% of patients demonstrated an improved VFA with better central visual acuity and over a century of experience suggests that they are probably right. But measurement of the visual acuity alone, while it typically is the primary benchmark for most evidence based data, does not necessarily provide the best value based data.

So the question arises, what is the difference between evidence based medicine and value based medicine, or in this case, evidence based ophthalmology and value based ophthalmology? Evidence based medicine incorporates the most reliable and reproducible data from clinical studies, particularly clinical trials. Value based medicine takes clinical efficacy delineated by evidence based data one step further and incorporates the evidence to measure the actual value of the therapy to a patient. While the concept of value based medicine may sound nebulous, it is far from it. The concept of value can be quantified by assessing the improvement in length of life and/or quality of life conferred by an intervention. For there is really nothing else we do, or should do, in health care other than improve length and/or quality of life. With ophthalmological interventions, in which death is infrequently encountered, the value of an intervention can be essentially measured by the improvement in quality of life.

Why is value important? Every society has finite scarce resources that, in the best interest of its people, should be maximised to yield the highest return. This endeavour can be quite difficult in health care, in fact impossible unless value based health care is considered. As an example, suppose a financial officer responsible for a healthcare budget at a large company poses the following question to an ophthalmologist: “Doctor, you have just told me that laser treatment for macular oedema associated with branch retinal vein obstruction improves the average person’s vision from 20/70 to 20/45. What does this mean in terms of value? The cardiologists were in here just before you and said that their evidenced based therapy improves the cardiac ejection fraction from 35% to 45%. What is the comparable value of your treatment and theirs?” With evidence based data alone, the question is virtually impossible to answer. With value based data it can be answered.

How does one measure value? Saunders and colleagues have attempted one method of measuring value by incorporating visual acuity, pain, and their visual function assessment as preoperative and postoperative criteria. The latter tool measures functional ability associated with various degrees of visual loss and has been considered by some to be a quality of life measure. We’re not so sure, however, that it truly measures quality of life or value. We have previously noted a high correlation between the VF-14 and visual acuity, not surprising since those with better central visual acuity can perform more intricate visual tasks. The question can then be asked, how much more do such visual function tests really tell us than the central visual acuity alone? The answer is still uncertain. But perhaps more importantly, the visual function tests (VF-14, the VFO-25 from the National Eye Institute and the visual function assessment) most commonly used to evaluate quality of life for ophthalmological interventions are generally not applicable across other medical specialties. And as much as we like to think that health care revolves around ophthalmology, those involved with healthcare policy have a much broader picture with which to deal.

“Data indicate that our interventions in ophthalmology are highly valued by patients”

There is a tool, however, that can measure the value associated with a healthcare intervention. And it can measure it across virtually all interventions in medicine. This evaluation tool is utility analysis. Developed in the 1940s to measure uncertainty, utility analysis was applied by researchers to health care in the 1970s. By convention, a utility value of 1.0 equates with perfect health and a value of 0.0 equates with death. There are a number of variants of utility value measure; one of the more popular variants, the time tradeoff methodology, essentially involves a theoretical scenario...
Cardiovascular disease

Atherosclerotic cardiovascular disease and diabetic retinopathy

Jorge G Arroyo

Risk for the development and progression of retinopathy

Ophthalmologists are well aware of the strong association between longstanding hyperglycaemia and the microvascular manifestations of diabetic retinopathy.\(^1\) The relation between macrovascular large vessel disease and diabetic retinopathy is less well understood, and is the subject of Klein et al’s paper in this issue of the BrJ Ophthalmol (p 84). These authors seek to shed light on the association between arteriosclerotic cardiovascular disease and diabetic retinopathy in a cohort of patients from the Cardiovascular Health Study (CHS).

In their paper, Klein et al found an association between cardiovascular disease, elevated plasma LDL cholesterol and gross proteinuria, and diabetic retinopathy. These associations were independent of age, sex, race, blood sugar, and duration of diabetes. They did not, as one might expect, find an association between internal carotid artery wall abnormalities or subclinical atherosclerosis and diabetic retinopathy. Although there was a significant association between elevated systolic blood pressure and retinopathy in the univariate analysis, this relation lost significance in the multivariate analysis. In contrast, elevated blood pressure has been found to be significantly associated with diabetic retinopathy in various large prospective and cross sectional studies.\(^1\) Klein et al found a significant relation between elevated plasma LDL cholesterol and retinopathy, which is consistent with other studies.\(^3\) This finding will be more definitively answered in ongoing prospective randomised controlled clinical trials of lipid lowering drugs. Finally, the association between gross proteinuria and diabetic retinopathy found by Klein et al corroborates the findings of other investigators.\(^7\)

As the authors point out, there are some limitations to their study. Firstly, and probably most significantly, is the fact that only about one half of the patients with diabetes, 296 out of 558 people classified as having diabetes in the CHS, were evaluated. The diabetic participants excluded from the study were in general older and sicker than the participants who were studied. Therefore, the younger and healthier diabetic participants in the study were not representative of the entire cohort of diabetic people in the CHS. Secondly, the cohort of diabetic participants studied is relatively small. Finally, the non-mydriatic non-stereoscopic fundus photography of one eye of each participant probably underreported the prevalence of diabetic retinopathy and macular oedema in the participants.

More definitive demonstration of the relation of atherosclerotic cardiovascular disease and diabetic retinopathy will require long term prospective studies begun at or before the onset of diabetes. Until these studies are actualised, Klein et al’s findings provide us with tantalising evidence of an association between atherosclerosis and diabetic retinopathy. If their results are confirmed by future studies, diabetic patients with evidence of atherosclerosis may have a higher risk for the development and progression of..."
REFERENCES


Outcome of corneal transplantation

Melissa M Brown and Gary C Brown

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