



## Do waiting times really matter?

Melissa M Brown

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- for phacolytic glaucoma. *Br J Ophthalmol* 2007;**91**:279–81.
- 2 Epstein DL, Jedziniak JA, Grant WM. Obstruction of outflow by lens particles and by heavy-molecular-weight soluble lens proteins. *Invest Ophthalmol Vis Sci* 1978;**17**:272–7.
  - 3 Flocks M, Littwin CS, Zimmerman LE. Phacolytic glaucoma: a clinicopathologic study of one hundred thirty-eight cases of glaucoma associated with hypermature cataract. *Arch Ophthalmol* 1955;**54**:37–45.
  - 4 Gogate PM, Deshpande M, Wormald RP, et al. Extracapsular cataract surgery compared with manual small incision cataract surgery in community eye care setting in western India: a randomised controlled trial. *Br J Ophthalmol* 2003;**87**:667–72.
  - 5 Gogate PM, Kulkarni SR, Krishniah S, et al. Safety and efficacy of phacoemulsification compared with manual small incision cataract surgery by a randomized control clinical trial. *Ophthalmology* 2005;**112**(5):869–875.
  - 6 Lane SS, Kopietz LA, Lindquist TD, et al. Treatment of phacolytic glaucoma with extracapsular extraction. *Ophthalmology* 1988;**95**:749–3.
  - 7 Muralikrishnan R, Venkatesh R, Prajna NV, et al. Economic cost of cataract surgery procedures in an established eye care centre in southern India. *Ophthalmic Epidemiol* 2004;**11**:369–80.
  - 8 Natchiar G, DabralKar T. Manual small incision sutureless cataract surgery: an alternative technique to instrumental phacoemulsification. *Operative Techniques Cataract Refract Surg* 2000;**3**:161–70.
  - 9 Pradhan D, Hennig A, Kumar J, et al. A Prospective study of 413 cases of lens-induced glaucoma in Nepal. *Indian J Ophthalmol* 2001;**49**:103–107.
  - 10 Prajna NV, Ramakrishnan R, Krishnadas R, et al. Lens induced glaucomas – Visual results and risk factors for final visual acuity. *Indian J Ophthalmol* 1996;**44**:149–55.
  - 11 Ruit S, Paudyal G, Gurung R, et al. An Innovation in developing world cataract surgery: sutureless extracapsular cataract extraction with intraocular lens implantation. *Clin Experiment Ophthalmol* 2000;**28**:274–279.
  - 12 Ruit S, Tabin GC, Nissman SA, et al. Low-cost high-volume extracapsular cataract extraction with posterior chamber intraocular lens implantation in Nepal. *Ophthalmology* 1999;**106**(10):1887–1892.
  - 13 Ruit S, Tabin GC, Chang, et al. Phacoemulsification versus manual sutureless cataract surgery: a prospective randomized trial. *Am J Ophthalmol*, 2006, in press.
  - 14 Singh G, Kaur J, Mall S. Phacolytic glaucoma—its treatment by planned extracapsular cataract extraction with posterior chamber intraocular lens implantation. *Indian J Ophthalmol* 1994;**42**:145–7.
  - 15 Speaker MG, Guerriero PN, Met JA, et al. A case-control study of risk factors for intraoperative suprachoroidal expulsive hemorrhage. *Ophthalmology* 1991;**98**:202–9.
  - 16 Venkatesh R, Das MR, Prashanth S, et al. Manual small incision cataract surgery in white cataracts. *Indian J Ophthalmol* 2005;**53**:181–4.
  - 17 Venkatesh R, Muralikrishnan R, Civerchia L, et al. Outcomes of high volume cataract surgeries in a developing country. *Br J Ophthalmol* 2005;**89**:1079–83.

## Cataract surgery

# Do waiting times really matter?

Melissa M Brown

## Shortening the waiting time for cataract surgery improves patients' quality of life

Mojon-Azzi and Mojon<sup>1</sup> have performed a superb analysis (see pages 282) which demonstrates that the waiting time for cataract surgery in 10 European countries is influenced primarily by the total expenditure on health ( $p < 0.01$ ). Of note is the fact that public expenditure on health, physician density and acute hospital bed density did not significantly influence waiting times.

Since cataract waiting times differ significantly among countries ( $p < 0.001$ ), a reasonable question to ask is, “do waiting times really make a difference for the average patient?”. Fortunately, a value-based medicine analysis sheds some light on this issue.

Excellent evidence-based data come from the PORT study, in which the average person who underwent cataract surgery had a visual acuity of 20/83 in the affected eye.<sup>2,3</sup> The average postoperative visual acuity, factoring in the complications of posterior capsular opacification, endophthalmitis, loss of lens particles into the vitreous cavity, intraocular lens dislocation, retinal detachment, cystoid macular oedema and bullous keratopathy, was 20/27.<sup>3</sup>

Utility values allow us to reproducibly quantify the quality of life associated with a health state.<sup>4</sup> Utilities also allow us to calculate the total value (improvement in

quality of life and length of life) conferred by virtually all interventions. For ocular procedures, the value gain is typically conferred by improvement in quality of life rather than improvement in length of life.

With vision, utility values decrease as the corresponding visual acuity in the better-seeing eye decreases.<sup>4</sup> Assuming that patients undergoing surgery have cataracts that are equal in both eyes, the utility value associated with 20/83 vision preoperatively is 0.71 and the utility value associated with 20/27 vision postoperatively is 0.858.<sup>3</sup> This results in a 0.148 (0.858–0.71) utility gain conferred by the cataract surgery.

The mean age of SHARE patients waiting for cataract surgery was 73.8 years.<sup>1</sup> The average life expectancy for a person of this age is approximately 13 years.<sup>5,6</sup>

The mean waiting time in the SHARE study was 3.3 months, but the wait to see an ophthalmologist can be up to a year.<sup>1</sup> Therefore, a total of 15.3 months could be necessary from the time a patient notes disabling visual loss until the responsible cataract is removed.

To calculate the quality of life lost in this instance (in quality-adjusted life-years, QALYs)<sup>3,4</sup> by delaying cataract surgery, the utility gain conferred by cataract

surgery is multiplied by the time (in years) from visual loss until the cataract is removed. Thus, there is a (0.148 utility gain  $\times$  1.275 years) = 0.19 QALY gain.

Looked at in another way, the average patient waiting 15.3 months for cataract surgery has a 21% diminution in quality of life, or life's value, during this time. This is a dramatic diminution in quality-of-life, equivalent to having an amputation versus no amputation or having clinically relevant coronary artery disease versus having none.<sup>7</sup> Averaged over the remaining lifetime of the patient, the 15.3 month wait for surgery results in a 1.6% diminution in quality of life on a daily basis. This latter percentage is not as severe as the diminution during the waiting period but is still considerable when it occurs only secondary to waiting!

In essence, the quality of life associated with various health states includes more than just what happens on the days of surgery or another intervention. As healthcare providers, we should do our best to maximise the value we confer to our patients. Shortening the waiting time from the start of visual disability until the responsible cataract is removed, or alternatively the waiting time for many other healthcare interventions, is a good way to begin.

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Correspondence to: Melissa M Brown, Center for Value-Based Medicine, PO Box 335, Flourtown, PA 19031, USA; [mbrown@valuebasedmedicine.com](mailto:mbrown@valuebasedmedicine.com)

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## REFERENCES

- 1 Mojon-Azzi SM, Mojon DS. Waiting times for cataract surgery in ten European countries: an analysis using data from the SHARE survey. *Br J Ophthalmol* 2007;**91**:282–6.

- 2 **Norregaard JC**, Hindsberger C, Alonso J, *et al*. Visual outcomes of cataract surgery in the United States, Canada, Denmark, and Spain. Report from the International Cataract Surgery Outcomes Study. *Arch Ophthalmol* 1998;**116**(8):1095–100.
- 3 **Busbee BG**, Brown MM, Brown GC, *et al*. Incremental cost-effectiveness of initial

cataract surgery. *Ophthalmology* 2002;**109**(3):606–12.

- 4 **Brown MM**, Brown GC, Sharma S. *Evidence-based to value-based medicine*. Chicago: AMA Press, 2005.
- 5 **Anon**. Life expectancy in Europe. News-Medical.net, July 9, 2006. <http://www.news-medical.net/?id=18747> (accessed 17 January 2007).

- 6 **Anon**. Social Security Online. Actuarial publications, period life tables, updated June 7, 2006. <http://www.ssa.gov/OACT/STATS/table4c6.html> (accessed 17 January 2007).
- 7 **Brown MM**, Brown GC. *Quality-of-life utility database*. Flourtown, PA: Center for Value-Based Medicine, 2006;1:514.

rRNA-based tests for chlamydial infection in trachoma

## rRNA-based tests for chlamydial infection in trachoma

Robin Bailey

Trachoma, the worlds leading cause of preventable blindness, is the subject of worldwide control efforts via the SAFE (Surgery, Antibiotic Treatment, Facial Cleanliness and Environmental Improvement) strategy. The “A” component of this strategy antibiotic treatment of the active disease has been supported through the large scale donation of millions of doses of the antibiotic azithromycin by its manufacturers, Pfizer, for distribution in trachoma endemic areas by the International Trachoma Initiative.<sup>1</sup> Azithromycin, as a single 20 mg/kg oral dose is effective against *Chlamydia trachomatis* infection.<sup>2</sup> In the field the diagnosis of active trachoma may be made simply by examining the surface of the everted upper eyelid for clinical signs of trachoma: lymphoid follicles and inflammatory thickening.<sup>3</sup> Current recommendations are that communities in which the prevalence of active trachoma is greater than 10% of 1–9 year olds should be mass treated annually for three years.<sup>4</sup> So far, so good. A problem, however is that the clinical signs of trachoma are quite poorly predictive of the presence of ocular chlamydial infection. Wherever tests for infection have been carried out, there have been significant rates of mismatch between infection and clinical signs: infection without disease and disease without infection are very common. There are also examples of whole communities with substantial rates of active trachoma in whom not a single individual has been found to harbour *C trachomatis* infection,<sup>5</sup> and of communities where mass treatment has suppressed infection, but clinical signs of trachoma persisted at pre-treatment levels.<sup>6</sup>

Distributing azithromycin repeatedly to such communities must be considered wasteful of scarce resources.

Thus there are at least three reasons why testing for infection in trachoma may be informative. Firstly it may tell us how to prioritise individuals or communities for treatment. Secondly it may indicate when treatment, or distribution ought to be discontinued, or resumed. Finally we may learn something useful about the biology of trachoma. In their paper, Yang *et al* present the first data using a commercial assay which detects chlamydial ribosomal RNA (rRNA) in subjects with trachoma (*see page 293*).<sup>7</sup> Because chlamydial rRNA, reflecting ribosomal activity, is typically present in infected cells at a multiplicity of hundreds to thousands of copies per chlamydial chromosome one would expect that, as demonstrated in their findings, rRNA based testing would be more sensitive than the more commonly applied AmpliCor PCR, which detects the common chlamydial plasmid pCT typically present at a median multiplicity of about six per chromosome in ocular infection.<sup>8</sup>

The advent of rRNA based tests raises more questions in need of answering. Does the detection of rRNA without chlamydial DNA really indicate an infectious reservoir of epidemiological significance? What is the prognosis for infection in these subjects? Does rRNA disappear before or after DNA following treatment?<sup>9</sup> A previous study, albeit using a homebrew quantitative assay, found that high level rRNA expression was strongly predictive of clinical signs of active trachoma.<sup>10</sup> It would be interesting to know whether quantitative estimation of rRNA in trachoma subjects

will reconcile these findings. Finally, trachoma habitually occurs in settings characterised by poverty and poor access to services and utilities. An ideal test for chlamydial infection would be specific, able to be performed at the point of care and to be interpreted by programme staff with minimal training, cheap and not requiring electricity or expensive technology. The high sensitivity conferred by nucleic acid amplification tests is likely not strictly necessary for community prioritisation and treatment-stopping decisions by programmes. A new test in dipstick format that detects chlamydial lipopolysaccharide antigen is currently undergoing evaluation and may fit the bill here.<sup>11</sup>

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Correspondence to: Robin Bailey, London School of Hygiene & Tropical Medicine Keppel Street, London WC1E 7HT, UK; [robin.bailey@lshtm.ac.uk](mailto:robin.bailey@lshtm.ac.uk)

### REFERENCES

- Kumaresan J**. Can blinding trachoma be eliminated by 20/20? *Eye*, 2005 Oct, **19**:1067–73.
- Bailey RL**. Randomised controlled trial of single-dose azithromycin in treatment of trachoma, *et al*. *Lancet*, 1993 Aug 21, **342**:453–6.
- Thylefors B**, *et al*. A simple system for the assessment of trachoma and its complications. *Bull World Health Organ* 1987;**65**:477–83.
- Solomon AW**, *et al*. Trachoma control: a guide for programme managers, WHO/LSHTM/ITI, Geneva 2006.
- Baral K**, *et al*. Reliability of clinical diagnosis in identifying infectious trachoma in a low-prevalence area of Nepal. *Bull World Health Organ* 1999;**77**:461–6.
- Solomon AW**, *et al*. Mass treatment with single-dose azithromycin for trachoma. *N Engl J Med*, 2004 Nov 4, **351**:1962–71.
- Yang JL**, Schachter J, Moncada J, *et al*. Comparison of an rRNA-based and DNA-based nucleic acid amplification test for the detection of *Chlamydia trachomatis* in trachoma. *Br J Ophthalmol* 2007;**91**:293–5.
- Aryee E**, *et al*. Plasmid copy number estimation in ocular samples. Proceedings of the 5<sup>th</sup> meeting of the European Society for Chlamydial Research, Univ of Szeged, 2004:356.
- Morre SA**, *et al*. Monitoring of Chlamydia trachomatis infections after antibiotic treatment using RNA detection by nucleic acid sequence based amplification. *Mol Pathol* 1998;**51**:149–54.
- Burton MJ**, *et al*. Conjunctival chlamydial 16S ribosomal RNA expression in trachoma: is chlamydial metabolic activity required for disease to develop? *Clin Infect Dis*, 2006 Feb 15, **42**:463–70.
- Michel CE**, *et al*. Field evaluation of a rapid point-of-care assay for targeting antibiotic treatment for trachoma control: a comparative study. *Lancet*, 2006 May 13, **367**:1585–90.