Intraocular irrigating solutions: a randomized clinical trial of Balanced Salt Solution Plus and dextrose bicarbonate lactated Ringer's solution

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Record Status
This is a critical abstract of an economic evaluation that meets the criteria for inclusion on NHS EED. Each abstract contains a brief summary of the methods, the results and conclusions followed by a detailed critical assessment on the reliability of the study and the conclusions drawn.

Health technology
Two intraocular irrigating solutions with or without oxidized glutathione after surgical treatment of cataract.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
64 patients undergoing extracapsular cataract surgery. 57% were male, mean age was about 70 years.

Setting
The setting was hospital care (surgery). The economic study was carried out in the USA.

Dates to which data relate
Cost and effectiveness data were obtained between 1991 to 1992. 1992 prices were used.

Source of effectiveness data
Single study.

Link between effectiveness and cost data
Costing was undertaken in same sample of patients as was used in the effectiveness study. It is unclear whether this was prospective or retrospective.

Study sample
The study sample were patients attending for cataract surgery between Oct 1991 and May 1992. 64 patients were enrolled in the study which had 80% power to detect a 50 micro-m2 difference in cell size between the two groups. 58 patients (91%) attended a 2 month follow-up postoperative visit. 4 patients were lost to follow up, 1 had a wound infection and 1 had postoperative photograph of poor quality. The number of patients refusing to be entered into the study was not reported.

Study design
Randomized controlled trial.
Analysis of effectiveness
Analysis was performed on a treatment completer basis. The main health outcome was cell size.

Effectiveness results
There was a significant change in cell size for both groups: 29.4 for balanced salt solution without oxidized glutathione and 27.5 with it. The difference was not statistically significant (p = 0.92).

Clinical conclusions
There is no difference in effectiveness between inclusion of oxidized glutathione and non inclusion. As the solution which does not include oxidized glutathione was the cheaper preparation this should be used.

Measure of benefits used in the economic analysis
Benefits were compared in terms of cell size but these did not differ between the groups.

Direct costs
Health providers' costs were measured (1992 prices).

Currency
US dollars ($).

Sensitivity analysis
Not undertaken.

Estimated benefits used in the economic analysis
Not applicable.

Cost results
Oxidized glutathione solution cost $62 for a 500ml bottle whilst an irrigating solution prepared in the clinic without glutathione was $9.80 (which declined to $4.17 for a second or third 500 ml bag prepared at the same time).

Synthesis of costs and benefits
Not applicable.

Authors' conclusions
There was no clinically significant advantage to including oxidized glutathione, although the cost was $52.20 cheaper per 500ml bottle.

CRD Commentary
The study was relatively limited in the costs and benefits that were measured. The effectiveness of the different solutions were cellular measures. It would have been better if the study were larger and could have measured more clinically relevant outcomes, such as post-operative infection rates. The study could have tried to measure patients' perception of treatment, such as post-operative pain and discomfort. Sensitivity analysis were not included.
Source of funding
Supported in part by funding from the Department of Clinical Investigation, Walter Reed Army Medical Center, Washington DC.

Bibliographic details

PubMedID
7862416

Indexing Status
Subject indexing assigned by NLM

MeSH
Aged; Bicarbonates /administration & dosage /economics; Cataract Extraction; Cell Count; Cell Size; Double-Blind Method; Drug Combinations; Endothelium, Corneal /cytology /drug effects; Female; Glucose /administration & dosage; Glutathione /administration & dosage /economics; Humans; Isotonic Solutions /administration & dosage /economics; Lenses, Intraocular; Male; Ophthalmic Solutions /economics; Prospective Studies; Therapeutic Irrigation /economics

AccessionNumber
21995000326

Date bibliographic record published
28/08/1997

Date abstract record published
28/08/1997