Management of mild fetal pyelectasis: a comparative analysis

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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.

CRD summary
This study examined the clinical and economic impact of two strategies for the antenatal management of unilateral or bilateral mild foetal pyelectasis, by monthly follow-up ultrasound examinations or a single follow-up examination in the third trimester. The authors concluded that mild pyelectasis could effectively be managed with a single third-trimester ultrasound examination, without compromising care, while saving costs compared with monthly surveillance. There were some methodological limitations that should be considered when assessing the validity of the authors’ conclusions.

Type of economic evaluation
Cost-effectiveness analysis

Study objective
This study examined the clinical and economic impact of two strategies for the antenatal management of unilateral or bilateral mild foetal pyelectasis.

Interventions
The two surveillance protocols for early cases of mild foetal pyelectasis were monthly follow-up ultrasound examinations and a single follow-up ultrasound examination in the third trimester.

Location/setting
USA/out-patient.

Methods
Analytical approach:
The analysis was based on one study with a follow-up until after delivery. The perspective was not explicitly reported.

Effectiveness data:
The clinical data came from the retrospective review of records, on the ultrasound database at the authors’ institution, from January 2003 to August 2006. All ultrasound examinations were performed by a registered diagnostic medical sonographer and independently reviewed by a specialist in maternal-foetal medicine. The allocation to monthly or single follow-up surveillance was determined by the provider's preference. There were 244 cases, with 88 in the monthly group and 156 in the single group. The key clinical outcomes were the rate of resolution (an anteroposterior diameter that was within the normal limits on the follow-up ultrasound scan) and the rate of stabilisation (an anteroposterior diameter that remained within the gestational age-defined limits for mild foetal pyelectasis).

Monetary benefit and utility valuations:
Not considered.

Measure of benefit:
No summary benefit measure was used.

Cost data:
The economic analysis included only the costs of the ultrasound examinations. The number of examinations was based on data from the clinical study. The unit cost was from the authors’ institution and the costs were in US dollars ($).

Analysis of uncertainty:
The issue of uncertainty was not investigated.

**Results**
The rate of resolution was 49% with monthly and 65% with single follow-up. The rate of stabilisation was 27% with monthly and 30% with single follow-up. There was a higher rate of progression to moderate pyelectasis (foetal pelvis of greater than 10mm at any gestational age) with monthly follow-up (21%) compared with single follow-up (8%, p<0.001). No cases progressed to severe pyelectasis and no cases required treatment.

The average cost per patient was $1,187 with monthly follow-up (average of 3.24 ultrasound examinations) and $798 with single follow-up.

**Authors' conclusions**
The authors concluded that mild foetal pyelectasis could effectively be managed with a single third-trimester ultrasound examination, without compromising care, while saving substantial costs compared with monthly surveillance.

**CRD commentary**

Interventions:
The selection of the comparators was appropriate because the two protocols were the only available and commonly used surveillance strategies for foetal pyelectasis.

Effectiveness/benefits:
A review of hospital charts is generally considered to be a weak method for estimating the clinical outcomes. The authors acknowledged that the retrospective nature of their study was an important limitation of the analysis as it precluded the possibility of demonstrating a clear relationship between the ultrasound finding and subsequent outcomes. No justification for the size of the sample was provided. The clinical endpoints were specific to the disease. The evidence came from a single institution and its patterns of care might not be representative of other medical centres or patients. These issues should be considered when assessing the validity of the clinical analysis.

Costs:
The economic analysis was restricted to the costs of the ultrasound examination. Other costs were not relevant as no further health care services or resources were used due to the lack of sequelae. The unit cost of an ultrasound examination was not explicitly reported. The resource use data were the actual consumption of resources by the patients included in the clinical analysis. Reflation exercises are not feasible, as the price year was not reported. No statistical analyses of the costs were carried out.

Analysis and results:
The results were clearly reported. A summary benefit measure would have been useful, but only intermediate outcomes were reported. The issue of uncertainty was not considered. The authors stated that these results could not be applied to cases where the pyelectasis was associated with aneuploidy or a genetic syndrome.

Concluding remarks:
The study had some methodological limitations that should be considered when assessing the validity of the authors' conclusions.

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**Bibliographic details**