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## Cost-effectiveness of acyclovir suppression to prevent recurrent genital herpes in term pregnancy

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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**

Acyclovir suppression to prevent recurrent genital herpes (HSV) in term pregnancy.

### **Type of intervention**

Secondary prevention.

### **Economic study type**

Cost-effectiveness analysis.

### **Study population**

Pregnant women with a history of HSV or with their first episode diagnosed during pregnancy.

### **Setting**

Community and secondary care. The economic study was conducted in Dallas, Texas, USA.

### **Dates to which data relate**

Effectiveness data were published between 1985 and 1996. 1995 price data were used.

### **Source of effectiveness data**

Previously published studies and expert opinion supplied the effectiveness data.

### **Outcomes assessed in the review**

Effectiveness outcomes assessed in the review were the risk of HSV recurrence at delivery and the corresponding likelihood of Caesarean delivery in untreated and acyclovir-treated patients.

### **Study designs and other criteria for inclusion in the review**

Not stated.

### **Sources searched to identify primary studies**

Not stated.

### **Criteria used to ensure the validity of primary studies**

Not stated.

### **Methods used to judge relevance and validity, and for extracting data**

Not stated.

### **Number of primary studies included**

The authors made reference to nine primary studies from which effectiveness data were retrieved.

### **Methods of combining primary studies**

Not stated.

### **Investigation of differences between primary studies**

Not stated.

### **Results of the review**

The general rate of recurrence for patients with genital herpes and who were compliant with the acyclovir regime was estimated to be 3%. For patients never treated with acyclovir the recurrence rate was assumed to be 20%. Caesarean section for all the groups was assumed to be 23% in the absence of HSV lesions and 85% with recurrence of HSV at delivery.

### **Methods used to derive estimates of effectiveness**

Authors' assumptions were based on preliminary results from interim analysis of an ongoing study evaluating the efficacy of acyclovir suppression in the last several weeks of pregnancy.

### **Estimates of effectiveness and key assumptions**

The estimated recurrence rate for those not compliant with acyclovir treatment was 30%. The authors assumed that 1% of the infants delivered vaginally in the presence of a lesion would receive acyclovir prophylaxis in the nursery. In the case of non-compliant mothers and those never treated with acyclovir, it was assumed that 2% of the neonates delivered abdominally and 12% of the infants delivered vaginally would be treated prophylactically. Frequency of endometriosis was estimated to be 3% after vaginal deliveries and 20% after Caesarean deliveries.

### **Measure of benefits used in the economic analysis**

No single measure of benefit was produced by the authors.

### **Direct costs**

Cost/quantities were not reported separately. Costs were estimated based on hospital and clinic charges using the average charges for a representative sample of women who delivered at Parkland Memorial Hospital (Dallas, Texas) during 1995. Direct costs included clinic visits from 36 weeks (acyclovir charges, HSV cultures), vaginal or Caesarean delivery with and without metritis (including labour and delivery, post-partum charges, and professional fees), neonatal care with vaginal or Caesarean delivery and infants treated for HSV (drug and culture charges). Costs were not discounted since the horizon of the analysis was not longer than one year.

### **Statistical analysis of costs**

Cost were not treated stochastically.

### **Indirect Costs**

Not included.

### **Currency**

US dollars (\$).

### **Sensitivity analysis**

Threshold sensitivity analysis was performed on compliance rate, recurrence risk, Caesarean rate, and cost for delivery (including neonatal care).

### **Estimated benefits used in the economic analysis**

Not applicable.

### **Cost results**

Total average cost of a patient not treated with acyclovir was \$7,625, against the average cost per patient treated with acyclovir of \$7,442 (compliant and non-compliant). A saving of \$183 per patient was estimated. An analysis of three specific groups of women was carried out. Group 1 included women whose first episode of HSV occurred during pregnancy, group 2 was women with a history of herpes and frequent recurrences (more than six a year) and group 3 was women with HSV diagnosed prior to pregnancy and no frequent recurrences (less than 6 per year). Analysis of the groups revealed that the highest cost savings (\$455 per patient) were produced by women whose first episode of HSV occurred during pregnancy. Threshold sensitivity analysis performed on the same three groups of women revealed compliance as the most sensitive factor (slight variations could lead to loss of the economic advantages) in group 3, whereas in the other two groups, Caesarean rate was the most sensitive variable.

### **Synthesis of costs and benefits**

Not applicable.

### **Authors' conclusions**

Prenatal acyclovir suppression appears to provide clinical benefits as well as cost savings for women with a history of genital herpes.

### **CRD COMMENTARY - Selection of comparators**

The reason for the choice of the comparator was clear. The common practice was to apply no medication and to perform a Caesarean section for pregnant women with clinical reactivation of genital HSV.

### **Validity of estimate of measure of benefit**

Clinical benefits were estimated based on a literature review and authors' opinion. As there was no evidence of a systematic search and review of the literature, it is not clear to what extent all relevant studies were included.

### **Validity of estimate of costs**

Hospital and clinic charges were used as a proxy for costs. Total costs only were reported and no further details were given about resource use and item costs. As the authors pointed out, the relevance of indirect costs related to the diagnosis and treatment of herpes could have a strong impact on patients' quality of life, though not considered in the present study.

### **Other issues**

Given the lack of details concerning the estimation of costs the findings of the study cannot be applied to other settings or countries.

**Implications of the study**

Further investigation of the potential benefits of acyclovir suppression to prevent recurrent genital herpes in term pregnancy is needed.

**Source of funding**

None stated

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