Immediate colposcopy or cytological surveillance for women with mild dyskaryosis: a cost effectiveness analysis

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
Using immediate referral for colposcopy and subsequent treatment, or using the usual policy of cytological surveillance, in patients with mild dyskaryosis.

Type of intervention
Diagnosis; Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
Women with a single mild or moderate dyskaryotic cervical smear.

Setting
Community and hospital. The economic study was carried out in the UK.

Dates to which data relate
The effectiveness and resource use data were collected from 1989 until an unspecified date. The price year was 1994.

Source of effectiveness data
Effectiveness data were derived from a single study.

Link between effectiveness and cost data
The costing was undertaken prospectively on the same patient sample as that used in the effectiveness study.

Study sample
No power calculations were reported. 145 women were randomly allocated to the immediate diagnosis and treatment group, and 158 to the two-year surveillance group.

Study design
The study was a randomized controlled trial performed in a single centre. The duration of follow-up was two years. The dropout rate was 22.8% in the control (surveillance) group. No dropouts were reported in the intervention group (immediate diagnosis and treatment).
Analysis of effectiveness
The analysis was based on intention to treat. The primary health outcome used in the analysis was the number of cases (as proportion of total) of cervical intra epithelial neoplasia grade III (CIN III) detected in each group.

Effectiveness results
In the intervention group 66 cases (46%) had CIN III, the corresponding figure for the control group being 43 cases (27%).

Clinical conclusions
The study revealed that immediate diagnosis and treatment was more effective in detecting cases of CIN III than the surveillance policy.

Measure of benefits used in the economic analysis
The measure of benefits in the economic analysis was the number of cases of CIN III detected.

Direct costs
Costs were discounted, with some quantities of resource use being reported separately from the costs. The cost analysis included costs of cervical smears, cytology, an assessment visit to the colposcopy clinic (including the cost of mean staffing time, material, running and laboratory costs), large excision of the transformation zone at the colposcopy clinic, a follow-up visit to the colposcopy clinic, and histology. The cost analysis (costs of assessments and treatments) was performed from the perspective of a health care system. The source of unit costs was the local health board Finance Department. The data were collected in 1989, with prices being adjusted to 1994 values by means of the Scottish Health Services specific price and pay index.

Statistical analysis of costs
In the cost analysis, 95% confidence intervals (CI) were estimated for the surveillance group.

Indirect Costs
Not considered.

Currency
UK pounds Sterling ( ).

Sensitivity analysis
No sensitivity analysis was performed.

Estimated benefits used in the economic analysis
In the intervention group 46% of patients had CIN III detected, the corresponding figure for the control group being 27%.

Cost results
The cost per woman was 82.02 (no variation) and 54.42 (95% CI: 48.85 - 59.98) in the intervention and control groups, respectively. The costs were discounted at a rate of 6%. 
Synthesis of costs and benefits
Incremental analysis was performed. The cost per case of CIN III detected, in 1994 prices and using a 6% rate of discount, was 180.18 (95% CI: 152.46 - 220.22) for the intervention group, and 199.94 (bias corrected percentile bootstrap 95% CI: 160.97 - 256.22) for the comparator. The incremental cost per additional case of CIN III detected by using the intervention rather than the comparator strategy was 148.22 (bias corrected percentile bootstrap 95% CI: 94.01 - 309.33).

Authors’ conclusions
The policy of changing from surveillance to immediate diagnosis and treatment for women with mild dyskaryosis will increase costs while increasing benefits, in terms of cases of CIN III detected, in a higher proportion. This study shows that the reallocation of existing resources to immediate diagnosis and treatment may result in an overall increase in health.

CRD COMMENTARY - Selection of comparators
A justification was given for the choice of the comparator. Two-year cytological surveillance by repeat cytology every six months, with referral to colposcopy only if dyskaryosis persists, was the recommended diagnostic strategy of choice in patients with mild or moderate dyskaryosis in the UK at the time the study was conducted. You should consider whether this is a widely used health technology in your own setting.

Validity of estimate of measure of benefit
The estimate of measure of benefit is likely to be valid, given the study design used.

Validity of estimate of costs
The costing methodology was clearly reported, but the analysis did not consider the costs associated with patients and their families.

Other issues
The issue of generalisability to other settings or countries was not addressed.

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