Pharmacoeconomical evaluation of clinical pathway in gastrectomy patients

Ise Y, Honjo K, So S, Senoo M, Katayama S, Hirano M, Mitsuhashi K, Yoshiyuki T, Kiyama T

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
The study examined a clinical pathway (CP) for gastrectomy patients. The pathway consisted of medication management and instruction tasks (i.e. pharmaceutical care and counselling for inpatients).

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
The study population comprised hospitalised patients with stomach cancer who were to have a gastrectomy. No further details of the inclusion or exclusion criteria were provided.

Setting
The setting was secondary care. The economic study was conducted at the Nippon Medical School Hospital, Tokyo, Japan.

Dates to which data relate
The effectiveness data come from a single study conducted between January and December 2001. The resource data related to the same time. The price year was not stated, but it was likely to have been 2001.

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

Link between effectiveness and cost data
The cost data for the single study were collected retrospectively from the same sample as that used in the effectiveness analysis.

Study sample
Power calculations were not used to determine the sample size. The study sample comprised 82 hospitalised patients who were to have a gastrectomy. CP was used for all the 46 (28 male and 18 female) patients who made up two wards from the total of five. The 36 (24 male and 12 female) patients in the remaining three wards received traditional individual consultation from doctors and formed the control group. The mean age was 62.7 years (standard deviation, SD=13.0) for the CP group and 65.7 years (SD=12.5) for the control group.
Study design
This was a non-randomised trial that was carried out in a single centre. The follow-up period was until hospital discharge. No loss to follow-up occurred.

Analysis of effectiveness
The analysis of effectiveness was conducted on an intention to treat basis. The outcomes assessed were pre- and postoperative stay at the hospital. The length of stay was used as a proxy for clinical outcomes. In terms of baseline characteristics, no significant differences were observed between the two groups in terms of the patients’ age or gender.

Effectiveness results
In the CP group, the mean preoperative stay was 9.2 days (SD=3.8) and the mean postoperative stay was 16.9 days (SD=3.8). The corresponding values in the control group were 12.8 days (SD=6.6; preoperative) and 22.6 days (SD=10.2; postoperative), respectively.

The differences between the two groups were significant for both preoperative stay, (p<0.01), and postoperative stay, (p<0.001).

Clinical conclusions
The introduction of the CP led to patients experiencing a shorter hospital stay by increasing efficiency in treatment and care.

Measure of benefits used in the economic analysis
The measure of benefit used in the economic analysis was the length of hospital stay. This was used as a proxy for the effectiveness of CP versus traditional care. No differences in health outcomes were reported, thus it can be assumed that the analysis was based on a cost-minimisation approach.

Direct costs
The direct costs used were for medication only. These included oral and external medication, injections, and medication for treatments, operations and examinations. Discounting was irrelevant due to the short period of analysis (less than 1 year). The costs and the quantities were not reported separately. The costs were estimated using actual data from the single study. The price year was not explicitly stated, but it was likely to have been 2001.

Statistical analysis of costs
The cost data were treated stochastically. The differences in costs between the CP and control groups were examined using the Mann-Whitney U-test.

Indirect Costs
The indirect costs were not included.

Currency
Japanese yen (Y).

Sensitivity analysis
No sensitivity analysis was carried out.
Estimated benefits used in the economic analysis
See the 'Effectiveness Results' section.

Cost results
The mean costs for oral and external medicines were Y17,554 (SD=19,448) for the CP group and Y36,636 (SD=31,657) for the control group. The difference between the two groups was statistically significant, (p<0.001).

The medication costs for injections were Y81,192 (SD=47,638) for the CP group and Y141,249 (SD=127,647) for the control group. This difference was also significant, (p<0.05).

The medication costs for treatments were Y4,204 (SD=8,059) for the CP group and Y3,926 (SD=2,782) for the control group.

The medication costs for operations were Y83,557 (SD=81,045) for the CP group and Y85,453 (SD=49,096) for the control group.

The medication costs for examinations were Y3,830 (SD=3,659) for the CP group and Y3,365 (SD=2,608) for the control group.

The differences between the two groups for the medication costs of treatment, operations and examinations were all non significant.

The total medication costs turned out to be significantly lower for the CP group, (p<0.05)

Synthesis of costs and benefits
The costs and benefits were not combined.

Authors' conclusions
The clinical pathway (CP) strategy, employing medication management and instruction tasks (i.e. pharmaceutical care and counselling) for gastrectomy patients, reduced the patients' hospital stay and medication costs. CP, therefore, would contribute to the reduction in medical costs in hospitals.

CRD COMMENTARY - Selection of comparators
The rationale for the choice of the comparator, traditional consultations by doctors, was clear. It was the natural choice with which to assess the relative impact of the CP.

Validity of estimate of measure of effectiveness
The effectiveness data were derived from a non-randomised controlled study in which the patients were allocated to the different groups according to the ward to which they were admitted. Thus, there is a potential for confounding and selection bias although the study groups were, in fact, shown to be comparable at baseline. No power calculations were used in the planning phase of the study to determine an appropriate sample size, but appropriate statistical tests were performed to assess differences. However, it should be noted that the authors did not report any differences in health outcomes. A cost-minimisation analysis was therefore performed, based on the assumption that there were no differences in clinical outcomes for the two groups (i.e. they were equally effective). Only brief details of the inclusion or exclusion criteria of the study population were given. Thus, it is difficult to assess how representative the sample is in comparison with the whole population of stomach cancer patients.

Validity of estimate of measure of benefit
Due to the cost-minimisation approach the benefit was based on cost-differences only.
Validity of estimate of costs
The authors reported clearly all the medication cost components used, but did not report the costs and the quantities separately. In addition, the price year was not explicitly reported. These two points tend to limit the generalisability of the cost data. However, appropriate statistical tests were used to test for differences in the costs, both at a component level and in comparing the total costs. Discounting was not reported, but this was appropriate given the short period of analysis.

Other issues
The authors did not compare their results with those from other studies. They did, however, support the generalisability of their results to other hospitals in Japan. The issue of future studies was addressed in relation to the clinical characteristics of the patients, in that the seriousness of stomach cancer and the presence of co-morbidities prior to operation should be taken into consideration.

Implications of the study
The results of the present study suggest that the proposed CP offered economic benefits, associated with length of hospitalisation, in comparison with traditional care by doctors. Further studies should consider the clinical profile of patients being considered for the CP.

Source of funding
None stated.

Bibliographic details

Indexing Status
Subject indexing assigned by NLM

MeSH
Aged; Comparative Study; Counseling; Critical Pathways /economics; English Abstract; Female; Gastrectomy; Humans; Male; Middle Aged; Pharmaceutical Services; Postoperative Care /economics

AccessionNumber
22003009211

Date bibliographic record published
30/06/2004

Date abstract record published
30/06/2004