Impact of a clinical pathway in cases of transurethral resection of the prostate

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 patients undergoing transurethral resection of the prostate (TURP). The CP consisted of the management of treatments, medications, examinations, observation and general care of the patients, and instructions and explanations for their operations, treatments and conditions.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
The study population comprised patients who were hospitalised in order to undergo TURP. However, patients who had been transferred from other departments in the hospital, those who had been re-hospitalised within 3 months of discharge and those who had preoperative complications relating to urinary organs, were excluded.

Setting
The setting was secondary care. The study was carried out at the Tokyo Medical University Hospital, Japan.

Dates to which data relate
The effectiveness data were derived from a single study carried out between June 1999 and March 2000. The resource data related to the same time. The price year was not stated.

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 utilised to determine the sample size. The study sample consisted of 69 hospitalised TURP patients, 32 in the CP group and 37 in the control (non-CP) group. The mean age was 70.4 years (range: 54 - 88; median 69) for the CP group and 71.9 years (range: 52 - 87; median 71) for the control group. The seriousness of the condition (mean volume of the affected area) was 56.6 cm³ (standard deviation, SD=21.8) for the CP group and 50.9 cm³ (SD=27.0) for the control group. Thirteen CP patients and 15 control patients had no preoperative
complications, while 12 CP patients and 18 control patients had preoperative complications that were treated by simple methods (e.g. medication only). Seven CP patients and 4 control patients had more serious preoperative complications that required treatments in conjunction with other departments in the hospital. These complications included high blood pressure, diabetes, stomach ulcer and arrhythmia.

Study design
This was a randomised controlled trial (RCT) that was carried out in a single centre. The method of randomisation was not stated. 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:

- the duration of pre- and postoperative stay,
- the time until the removal of the catheter,
- the number of cases of postoperative complications, and
- the number of cases of re-hospitalisation within 6 months.

In terms of baseline characteristics, no clear differences between the CP and control groups were observed in terms of the patients' age, seriousness of the condition and complications.

Effectiveness results
The mean preoperative stay was 4.2 days (SD=1.5) for the CP group and 5.4 days (SD=3.4) for the control group.

The mean postoperative stay was 7.3 days (SD=2.5) for the CP group and 8.3 days (SD=3.1) for the control group.

The mean time until the removal of the catheter was 4.75 days (SD=1.1) for the CP group and 5.4 days (SD=2.1) for the control group.

In terms of postoperative complications, one case (liver dysfunction) was observed in the CP group, while two cases (TUR syndrome and bladder tumour) were observed in the control group.

One case of re-hospitalisation (due to postoperative bleeding) was observed for the CP group, whereas no cases were observed for the control group.

Clinical conclusions
The CP was more effective than the traditional treatment method in reducing the duration of hospital stay for TURP patients. The number of postoperative complications and re-hospitalisations did not differ between the two methods.

Measure of benefits used in the economic analysis
No summary benefit measure was used in the economic analysis. The health outcomes were those associated with the effectiveness results and, as such, the authors conducted a cost-consequences analysis.

Direct costs
The direct costs were calculated using the Japanese social insurance points for the patients, based on the actual treatment fee details. These included the costs for medications, injections, treatments, operations, anaesthetics, examinations, X-rays, hospitalisation and medical management fees. Discounting was irrelevant due to the short period of analysis (less than 1 year). The costs and the quantities were not reported separately. The price year was not
No statistical analysis of the costs was carried out.

Indirect Costs
The indirect costs were not included.

Currency
Japanese social insurance points. These were not translated into costs, thus no specific currency was provided.

Sensitivity analysis
A sensitivity analysis was not conducted.

Estimated benefits used in the economic analysis
See 'Effectiveness Results' section.

Cost results
The mean total costs were 48,424.2 points (SD=4,437.5) for the CP group and 55,365.5 points (SD=16,805.1) for the control group.

Cost reductions in the CP group were observed in all cost items. More specifically, medications (25.8%), injections (30.8%), treatments (10.0%), operations and anaesthetics (4.6%), examinations (8.4%), X-rays (30.1%), hospitalisation (12.7%) and medical management fees (11.7%).

Synthesis of costs and benefits
The costs and benefits were not combined. However, the use of a CP reduced the mean length of hospital stay from 14.7 to 12.7 days and the total direct costs by 12.5% (from 55,365.5 to 48,424.2 points).

Authors' conclusions
The implementation of a clinical pathway (CP) led to a reduction in the length of patients' hospital stay and medical costs. Thus, the CP can be considered to be a good tool for health care cost management. It could be applied not only to patients undergoing transurethral resection of the prostate (TURP), but also to patients suffering from other conditions. However, the uniqueness of the patients' conditions and needs have to be considered when setting up CP programmes.

CRD COMMENTARY - Selection of comparators
The rationale and justification for the choice of the comparator (no CP) was clear. Although the intervention was very clearly and comprehensively described, few details of traditional care were given.

Validity of estimate of measure of effectiveness
The study used a RCT, which was appropriate for the study question and potentially has high validity. However, no descriptions of the method of randomisation and assessment were given. Blinding of allocation may have been feasible but not assessment. It should be noted that, although the descriptive results were clearly reported, there was no evidence to indicate that the sample size was sufficiently large to detect significant differences. In addition, statistical
analyses of the data were not reported. These points may affect the reliability of the effectiveness results.

**Validity of estimate of measure of benefit**
The health benefits used in the study were left disaggregated and, as such, a cost-consequences analysis was performed.

**Validity of estimate of costs**
The authors used social health insurance points to proxy costs, which is a valid approach for the Japanese context. However, this method restricts the potential to replicate the results in other settings since the opportunity costs were not presented. Thus, the cost results are only useful in determining the relative differences in resource use between the CP and traditional care for the patient domain studied. The generalisability of the results is further hampered by the fact that the costs and the quantities were not reported separately and a price year was not provided (although a price year would be of use only to a Japanese context in view of the use of social insurance points).

**Other issues**
The authors did not compare their results with those of other studies, although they did point out that few reports have been published in Japan for clinical pathways in urology. The issue of generalisability to other settings was discussed, in that the authors clearly felt that the CP approach would be applicable to other patient domains. In economic terms, the generalisability of the results would be limited to Japan because of the adoption of social insurance points data to proxy costs. In spite of these caveats, the study was well reported and details of the intervention itself were comprehensively described in the paper.

**Implications of the study**
The findings of the study supported the introduction and use of the CP from both clinical and economic perspectives. The results could be validated further in future studies due to the limitations of the present study, as outlined already. The use of specific cost data, if feasible, would enhance the generalisability of the results outside of the Japanese context.

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