Ernioplastica secondo Bassini versus Trabucco: analisi comparativa dei risultati
[Comparison of hernioplasty using the technique of Bassini and Trabucco: comparative analysis and results]

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
Hernioplasty based on the Trabucco “tension free” repair (local anaesthesia) technique compared to the Bassini technique (general anaesthesia) for patients suffering from inguinal hernia.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
The study population comprised patients suffering from inguinal hernia and with no complications such as bilateral pathologies or recurrences.

Setting
The study setting was the community. The economic study was carried out in the Institute of General Surgery of the University of Bari, Italy.

Dates to which data relate
Effectiveness and resources data were gathered from January 1991. The price year was 1997.

Source of effectiveness data
The evidence for the final outcomes was obtained from a single study.

Link between effectiveness and cost data
The costing (including in-patient hospitalisation time, cost of each procedure, number and cost of complications) was carried out prospectively on the same sample of patients as that used in the effectiveness study.

Study sample
In total, 80 patients suffering from inguinal hernia were randomly assigned to hernioplasty based on the Bassini technique (40 patients, mean age 45 years) or to hernioplasty based on Trabucco repair (40 patients, mean age 48 years). Patients with complications such as bilateral pathologies or recurrences were excluded. No patient refused to participate in the study. No power calculations were performed to determine the sample size.
Study design
The study was a randomised controlled trial carried out in a single centre: Institute of General Surgery of the University of Bari, Italy. The average duration of the follow-up was 58 months and no patient dropped-out.

Analysis of effectiveness
The demographic characteristics and the health status of the patients randomly assigned to the two groups seemed to be similar, even though no statistical analyses were performed. The primary health outcomes were the number of postoperative recurrences and complications observed for the two groups during the follow-up, and the number of days necessary for patients to return to full time work. Patients employed in intellectual employment were analysed separately from patients employed in manual labour. Dependent and independent workers were considered separately. The patients also completed a questionnaire to assess the level of post-operative pain at one week after the hernioplasty. This questionnaire was based on a subjective perception of pain ranging from 1 (no pain) to 4 (maximum level of pain).

Effectiveness results
Three complications (7.5%) were observed in the Bassini group (two haematomas of the wound and one persistent neuralgia) and two (5%) in the Trabucco group (one haematoma and one persistent neuralgia).

Two recurrences (5%) occurred in the traditional hernioplasty group (after 38 and 49 months) compared to no recurrences for patients treated with the Trabucco technique.

Patients who received the Trabucco repair returned to work, on average, after 14.5 days. Return to work time ranged from a minimum of 5.5 days for patients employed in intellectual labour and independent to a maximum of 20.4 days for patients employed in manual labour and dependent. Patient treated with the traditional technique returned to work on average after 30.3 days. The period to return to work ranged from a minimum of 23.3 days for patients employed in intellectual labour and independent to a maximum of 35.6 days for patients employed in manual labour and dependent.

The Trabucco repair led to an earlier resumption of work activities for all the categories of patients considered.

The average post-operative pain perceived by the patients was 2.22 (with a maximum of 2.9 in the first post-operative day and a minimum of 1.5 after one week from the operation) in the Bassini group and 1.48 (with a maximum of 2.3 the first day and a minimum of 0.7 after one week from the operation) in the Trabucchi group.

Clinical conclusions
The study revealed that hernioplasty based on Trabucco tension free repair was more effective than the traditional (Bassini) technique.

Measure of benefits used in the economic analysis
No summary health benefit was used in the economic analysis and clinical outcomes were left disaggregated. Therefore, a cost-consequences analysis was performed.

Direct costs
The average total costs per patient associated with the two different techniques of hernioplasty were calculated. The costs included the cost of the treatment, hospital stay and cost of complications. Average length of stay and the number of complications were estimated, but no data on unit costs were reported. The cost calculations were obtained from the trial. No discount rate was applied. The price year was 1997.

Statistical analysis of costs
No statistical analysis of costs was performed.
Indirect Costs
The authors calculated the number of days necessary for patients to return to full time work in order to obtain health benefits. They did not, however, associate this with costs in order to obtain a measure of productivity loss. The authors may have wished to exclude these costs in order to avoid a potential double counting: reduction of productivity loss was perceived as a measure of health benefits.

Currency
Italian lira (L). No conversion to other currencies was undertaken.

Sensitivity analysis
No sensitivity analysis was carried out.

Estimated benefits used in the economic analysis
The reader is referred to the effectiveness results reported earlier.

Cost results
The average total costs per patient associated with the hernioplasty performed with the Trabucco repair were estimated to be L1,183,000 compared to an average cost of L3,495,000 for patients treated with the Bassini technique.

Synthesis of costs and benefits
Not applicable.

Authors’ conclusions
The authors concluded that the hernioplasty by Trabucco repair, given the use of local anaesthesia, was less invasive, less costly (because fewer resources were used) and more effective than the traditional Bassini technique.

CRD COMMENTARY - Selection of comparators
The choice of comparators was appropriate. The new tension free Trabucchi repair was compared with the technique traditionally used for hernioplasty.

Validity of estimate of measure of effectiveness
The effectiveness evidence was obtained from a randomised controlled study. Using statistical tests could have increased the robustness of the results, in terms of the internal validity. Also, it might be interesting to compare the results of this trial with other similar studies.

Validity of estimate of measure of benefit
Health benefits were extrapolated from the same sources used to obtain the effectiveness evidence. This raises the same issues described for the measure of effectiveness (above).

Validity of estimate of costs
All categories of cost relevant to the perspective adopted were included in the study. However, only average total costs per patient were calculated in the study and costs and quantities were not reported separately. A more detailed report of resources used and unit costs would have been interesting.
Other issues
The authors did not make appropriate comparisons of their findings with those of other studies and did not address the issue of the generalisability of the study results to other settings. As stated by the authors, the use of local anaesthesia is particularly recommended for elderly patients who might suffer from complications of the respiratory or cardiovascular system. It is, however, not recommended for adolescents or for patients suffering from allergies to local anaesthesia. The choice between the two hernioplasty techniques should therefore be related to the characteristics of the patients treated.

Implications of the study
The authors suggest that hernioplasty performed by the tension free Trabucchi repair should be encouraged in the Italian context, in particular after the introduction of DRGs.

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