Treatment alternatives for axillary-subclavian vein thrombosis: long-term follow-up

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
Treatment alternatives for axillary-subclavian vein thrombosis (lytic or anticoagulant therapy).

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
The study population consisted of young patients with axillary-subclavian vein thrombosis. Patients with other causes for their axillary-subclavian vein thrombosis such as malignancies, systemic disease, or known hypercoagulable states were excluded.

Setting
Hospital. The study was set in the USA.

Dates to which data relate
Effectiveness, resource use, and cost data were collected from hospital and office records between June 1986 and June 1992. The price year was not reported.

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 analysis.

Study sample
Nine patients underwent conventional treatment (heparin and warfarin) and 10 had initial lytic therapy followed by heparin and warfarin. Three patients had cervical or first rib resection. 13 patients had spontaneous thrombosis and six were secondary to central venous catheterisation. All patients presented with marked edema and pain of the involved arm. No power calculations were reported.

Study design
This was a retrospective cohort study carried out at a single centre. No patients were lost to follow-up. Mean follow-up
Analysis of effectiveness
The analysis of the clinical study was based on treatment completers only. Primary health outcomes used included improvement in arm swelling and final venographic and colour duplex findings. The authors did not show whether, at analysis, groups were comparable in terms of demographic characteristics.

Effectiveness results
The effectiveness results were as follows:

22% of patients treated with anticoagulation therapy had open veins and normal clinical resolution as their final outcome, as opposed to 80% of patients treated with thrombolytic therapy, (p=0.018).

When patients with some clinical improvement were included, 44% in the anticoagulant group and 90% in the lytic group had satisfactory outcomes, (p=0.049).

There were no significant bleeding complications.

17% of patients with spontaneous cause in the anticoagulation group and 71% in the lytic therapy group had open veins and normal clinical resolution, (p=0.078).

When these patients were combined with those who had some improvement clinically, 50% of patients in the anticoagulation group and 86% in the lytic therapy group had a satisfactory outcome.

4 patients with spontaneous cause showed some narrowing of the veins.

One of three patients with axillary-subclavian vein thrombosis secondary to central venous cannulation who were treated with anticoagulation therapy had open veins, in contrast to all three in the lytic therapy group.

Clinical conclusions
Patients treated with thrombolytic therapy had better outcomes than those treated with conventional anticoagulation therapy.

Measure of benefits used in the economic analysis
No summary benefit measure was used in the economic analysis. Benefit measures included improvement in arm swelling and final venographic and colour duplex findings and, as such, a cost-consequences analysis was undertaken.

Direct costs
The authors did not state if direct costs were discounted. Quantities and costs were not reported separately. Direct costs covered hospitalisation and treatment costs. The quantity/cost boundary adopted was that of the hospital. The estimation of quantities and costs was based on actual data. Quantity and cost data were collected from the authors’ institution. The price year was not reported.

Indirect Costs
Indirect costs were not included.

Currency
US dollars ($).
Sensitivity analysis
No sensitivity analysis was reported.

Estimated benefits used in the economic analysis
See effectiveness results above.

Cost results
The average cost per patient for initial hospitalisation and treatment was $19,039 greater in the lytic therapy group than in the conventional treatment group.

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

Authors' conclusions
The authors concluded that lytic therapy appears to be superior to anticoagulation in the treatment of axillary-subclavian vein thrombosis. However, such treatment is more expensive and its benefits should be carefully weighed against the cost in each case.

CRD COMMENTARY - Selection of comparators
A justification was given for the comparator used, namely currently available therapy. You, as a user of the database, should decide if these health technologies are relevant to your setting.

Validity of estimate of measure of benefit
The analysis was based on a retrospective cohort study, which although appropriate for the study question, has limited validity in comparison with an experimental design. The study sample was representative of the study population. The authors did not state, however, if groups were comparable at analysis, and this may have adversely influenced the results. The authors did not derive a measure of health benefit. The analysis was therefore one of cost-consequences in design.

Validity of estimate of costs
More details about the cost analysis could have been provided. The economic aspects of the study were clearly not the main focus of the paper as quantities and costs were not reported separately, no sensitivity analyses were conducted on costs or quantities and the price year was not reported. These issues restrict the internal and external validity of the cost results.

Other issues
The authors did make appropriate comparisons of their findings with those from other studies. The issue of generalisability to other settings was not addressed. The authors do not, however, appear to have presented their results selectively. The study examined patients with axillary-subclavian vein thrombosis and this was reflected in the authors' conclusions.

Implications of the study
Thrombolytic therapy alone or combined with first rib resection should be the treatment of choice in effort vein thrombosis in healthy, productive patients whose lifestyles depend on continued strenuous use of the involved limb. The authors' believe that aggressive attempts to restore major veins are indicated and are appropriate.
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