Cost-effectiveness of bone marrow transplantation in acute nonlymphocytic leukemia

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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
Induction chemotherapy (unspecified), and related donor bone marrow transplantation for acute nonlymphocytic leukemia.

Type of intervention
Surgery.

Economic study type
Cost-effectiveness analysis.

Study population
Patients aged 30.

Setting
The study was carried out in the USA.

Dates to which data relate

Source of effectiveness data
Single study.

Study sample
It is unknown whether there is evidence that the study sample is representative of the clinical study question. Power calculations were not used to determine the sample size. The number of patients overall was 36, with 17 in the intervention group and 19 in the control group. The percentage of patients who refused to participate was 0.122.

Study design
Single centre, other prospective controlled trial, with no blinding. The duration of follow-up of the treatment cohort was 5 years. There were no drop out rates.

Analysis of effectiveness
Analysis was based on treatment completers and the primary outcome was 5 year survival. At analysis, groups were not shown or adjusted to be comparable in age, sex or prognostic features.
Effectiveness results
Log rank p=0.13.

Measure of benefits used in the economic analysis
Life-years gained.

Direct costs
Direct costs were to the health service and included: days in intensive care (ICU) and in non-ICU, pathology, x-ray, and operating room procedures. Price information related to 1989.

Currency
US dollars ($). In the DH Register of Cost-Effectiveness Studies, the original results were converted to UK using GDP purchasing power parities, and reflated to 1991, using the NHS pay and prices index.

Sensitivity analysis
Sensitivity analysis was carried out using the methods of single parameter variation and threshold analysis.

Synthesis of costs and benefits
Intervention and cost duration were 5 years. Outcome duration was life long. Incremental cost per life year gained was 2630 (costs and benefits not discounted); 6930 (costs and benefits discounted at 5%) and 12800 (costs and benefits discounted at 10%). The range of incremental cost per life year gained was 6930 to 41100. The sensitive parameter was survival after remission.

CRD Commentary
(This commentary was not written by CRD, but by the authors of the DH Register).

1) Survivors to 5 years are assumed to have recovered and then gain normal life expectancy. This assumption and the very small numbers in the study make the accuracy of survival and cost per life year estimation uncertain.

2) The costing is intended to reflect resource usage and excludes physician charges.

3) The paper also calculated cost per life year ratios for both treatments compared to doing nothing assuming zero costs, zero life expectancy: since neither are zero these ratios are of questionable value. With normal life expectancy for 5-year survivors: chemotherapy vs. nothing yielded 15,300 (costs and benefits discounted at 5%); transplantation vs. nothing yielded 11,500 (costs and benefits discounted at 5%) [1991].

4) The hypothesis was driven.

Bibliographic details

PubMedID
2505077

DOI
10.1056/NEJM198909213211207
Other publications of related interest

Indexing Status
Subject indexing assigned by NLM

MeSH
Adolescent; Adult; Bone Marrow Transplantation; Cost-Benefit Analysis; Costs and Cost Analysis; Female; Humans; Intensive Care Units /economics; Male; Middle Aged; Precursor Cell Lymphoblastic Leukemia-Lymphoma /drug therapy /economics /surgery; Prospective Studies; United States

AccessionNumber
21995005267

Date bibliographic record published
13/02/1997

Date abstract record published
13/02/1997