Thymus therapy for cancer: a criteria-based, systematic review

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Authors' objectives
To review the evidence for and against the clinical effectiveness of thymus therapy for cancer.

Searching
MEDLINE was searched from 1966 to 1996 using the following MeSH terms: 'cancer', 'alternative medicine', 'thymus extract' and 'cell therapy'. In addition, books and non-MEDLINE-listed articles on the subject were searched for references. Several experts in the field were also consulted. The bibliographies of all the retrieved papers were examined for further references.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) were included.

Specific interventions included in the review
Thymus therapy, chemotherapy only, placebo, vitamin B complex and no treatment. Thymus therapy comprised the following: 15 mg Neythymun or Ney Tumorin (1 study); 20 to 60 mg Thymosin fraction V (1 study); 900 microg/m2 Thymosin alpha-1 (1 study); Drg Zellmedin Thymus 200 (1 study); and various dosages of Thymostimulin (8 studies),

Participants included in the review
Patients with cancer including lung, breast, colorectal, Hodgkins, and lymphadenoma or myeloma. No further details were given.

Outcomes assessed in the review
The review did not look at specific outcomes. Examples of some of the outcomes reported in the included studies were mortality, the length of the recurrence-free period, white blood cell and platelet count, the number of infections, and improvement in immunological variables.

How were decisions on the relevance of primary studies made?
The author does not state how the papers were selected for the review, or how many of the reviewers performed the selection.

Assessment of study quality
The author does not report a method for assessing validity, other than to say that methodological details are summarised.

Data extraction
The author does not state how the data were extracted for the review, or how many of the reviewers performed the data extraction.

Methods of synthesis
How were the studies combined?
A description of the individual studies was presented. There was no attempt to combine the results.

How were differences between studies investigated?
The author discussed the differences between the studies and the methodological rigour in the narrative description of
the included studies.

**Results of the review**
Thirteen RCTs with a total of more than 802 participants (one study does not state how many people participated) were included.

The included studies varied greatly in terms of the type of cancer investigated, the type of outcome measured, thymus therapy, and the duration of treatment. The majority of the trials reported that thymus therapy had a beneficial effect, although many results were not statistically significant. The methodological quality of the studies was generally poor with, for example, small sample sizes, insufficient detail, heterogeneous groups, multiple testing without correction, and a lack of blinding. Consequently, the validity of the results of the studies is questionable.

**Authors' conclusions**
No compelling evidence exists for the clinical efficacy of thymus therapy in human cancers. Some promising results deserve further, more rigorous investigation. Currently, thymus therapy cannot be recommended outside RCTs and should be regarded as an experimental form of therapy.

**CRD commentary**
The authors acknowledge that this review is limited by the poor quality of the primary studies included; however, no details are provided about how the primary studies were quality assessed. There was also a lack of detail about how decisions were made about the inclusion and exclusion of studies. The literature search was limited in that MEDLINE was the only database searched, and there was no rigorous searching for unpublished data. There was also no clear synthesis of the results of the included trials. The author's conclusions appear to follow from the results presented.

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**Record Status**
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.