Reviewer's report

Title: Early prediction of therapy response in patients with acute myeloid leukaemia by nucleosomal DNA fragments

Version: 1 Date: 8 January 2006

Reviewer: Nejat Dalay

Reviewer's report:

General
In this study the authors investigate the levels of nucleosomal DNA fragments, thymidine kinase, lactate dehydrogenase and leucocytes in patients with AML during induction therapy and evaluate the correlation with the response to therapy. They conclude that nucleosomal DNA levels may be used as a predictor of the therapeutic efficiency.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)
The study comprises 25 patients including two with relapsing disease. The main result of the study relies on the observation that significantly higher levels of nucleosomal DNA are measured in patients in whom complete response is achieved. Thus, the sample size is limited. I would have preferred to observe the same data in a considerably larger group of AML patients. Furthermore, from the data given in Table 2 we can see that the nucleosomal DNA levels are higher in responders. Statistical significance between groups is achieved only for the levels on days 2 and 4. This difference is mainly due to the higher upper range in both cases. However, it is not clear in how many patients higher levels are detected. e.g. whether this is the result of one or two patients displaying very high levels or whether significant increases were detected in most of the patients. In Figure 1 the courses for two representative patients are depicted. It should be indicated in how many patients exactly the same type of course or deviations from it are obtained. Higher levels of nucleosomes in responders and immediate decrease in non-responders are in contrast to several earlier studies which have shown higher and persisting levels in non-responders. The authors explain this by different pathophysiological backgrounds of the tumors which is not convincing and requires further discussion. The blast numbers are an important factor in AML and are correlated with the disease outcome. Blast counts in the patients are not given. Association between the initial blast counts, response and nucleosomal levels should be indicated.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)
Table 1 does not provide useful information. The histology and mode of therapy are not evaluated as variables in the study and can be easily omitted. Alternatively, more relevant information (blast nr, etc) should be added. The number of patients under “Mode of therapy” adds up to 24. Abbreviations (TAD and HAM) should be explained when mentioned first in the text (Introduction).

Discretionary Revisions (which the author can choose to ignore)

What next?: Unable to decide on acceptance or rejection until the authors have responded to the
major compulsory revisions

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes

**Declaration of competing interests:**

'I declare that I have no competing interests'