Correspondence

Bone marrow biopsy specimens in assessment of remission in acute leukemias

We found the paper on the value of bone marrow biopsy in acute leukemias interesting.1 We have found that biopsy specimens are more informative regardingcellularity, blast cell percentages and their response to chemotherapy. We have also attempted to determine the usefulness of trephine biopsy specimens for assessing remission in acute leukemias: one third of the marrow aspirates have been inconclusive in our hands. We carried out marrow trephine biopsies and aspirates in 15 patients with acute myeloid leukemia (AML) and 20 patients with acute lymphoblastic leukemia seven days after completion of chemotherapy2 in cases of AML, and at the end of four or six cycles of induction chemotherapy in cases of ALL.3 Twelve (34%) of the aspirates were "unsatisfactory"; all the biopsy specimens were satisfactory for comment. Based on the histomorphology of the biopsy specimens, 15 cases were in remission, 19 cases had blast cell transformation and one case displayed myelonecrosis.

Fifteen cases in remission showed pronounced hypocellularity, marrow oedema, serous atrophy with evidence of fat, erythroid, and megakaryocytic regeneration4 in four cases. Nine of 12 (75%) of the "unsatisfactory" aspirates came from these five cases because induction chemotherapy depletes the marrow of leukemic cells, resulting in hypocellularity and oedema; the core biopsy specimens showed evidence of remission.

Nineteen cases showed the presence of blast cells in the marrow trephine specimen with normal to hypercellularity in 15 and hypocellularity in four cases. Sixteen of 19 (84%) of the aspirates in this group were "unsatisfactory" because of good marrow cellularity. This varied in the biopsy specimens in different marrow spaces and blast cell distribution was not uniform. Because blast cells are present not only in some marrow spaces, the aspirate may not include such a focus resulting in overdosing of remissions. This was true of three cases which were reported as being "in remission" according to the marrow aspirate, but trephine biopsy specimens showed patchy clustering of blasts. Core marrow biopsy seems, therefore, to be essential for precise assessment of remission after induction chemotherapy.


Dr Winfield comments:

The comments of Dr Singh and his colleagues on the value of bone marrow core biopsy specimens in assessing remission in acute leukaemia reinforce the observations in our paper that core biopsy specimens provide a more accurate assessment of total marrow cellularity and of blast cell numbers. Their letter also raises the question of when marrow samples should be taken after chemotherapy to assess remission and whether bone marrow and trephine core biopsy samples are required.

For the current Medical Research Council AML 10 Trial, the policy is that marrow aspirate should be taken twice weekly after the completion of chemotherapy. If the aspirate is normocellular, contains less than 5% leukemic blast cells, and shows evidence of normal maturation of other marrow elements then the patient is in complete remission. If the marrow fragments and tri- als are hypoplastic then an aspiration should be repeated in one week. Only if the marrow is diluted with peripheral blood and contains no fragments is a trephine biopsy indicated.

The current MRC Acute Lymphoblastic Leukaemia Trial (UKALL XII) operates a similar policy, using day 22 after the start of remission induction as the time for assessment. The use of these protocols should usually enable the haematologist to provide a reasonably accurate assessment of remission, and I cannot therefore agree with Dr Singh’s conclusion that marrow core biopsy is essential in assessing remission in all cases of acute leukaemia. Selective use of trephine biopsies has the additional advantage for many patients of avoiding the discomfort and haemorrhagic problems which may be associated with this procedure.

Histopathology EQAs: the definition and identification of poor performance

Dr Furness and Professor Launder comment: We are grateful for the encouraging comment and constructive criticism provided by Dr Griffiths. His suggestion of a local "standards committee" is certainly to be welcomed. Such a committee could also review other performance parameters, such as measurements of the timeliness of reports. Local knowledge will certainly be needed to evaluate results before any remedial action is taken; for example, one should not censure a pathologist for poor performance in urological pathology if he has worked for 20 years at a hospital where urological surgery is never carried out.

We consequently agree that the control of "standards committees" must be kept with local pathologists who understand the local situation. Nevertheless, it is obvious that if such committees are to have any credibility or consistency they will have to work to clear national guidelines, and they will have to have well defined "teeth". The problem of defining persistent poor performance is therefore not completely resolved. Our understanding is that the histopathology Advisory Panel of the Joint Working Group on Quality Assurance is considering such guidelines. Should one of Dr Griffiths’ helpful letter be copied to the chairman of the panel, Professor F Walker.
Histopathology EQAs: the definition and identification of poor performance.

D F Griffiths

*J Clin Pathol* 1993 46: 972
doi: 10.1136/jcp.46.10.972-b

Updated information and services can be found at:
http://jcp.bmj.com/content/46/10/972.2.citation

**Email alerting service**

Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

**Notes**

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/