**Letter to the Editor**

Management of an acute abdomen following high-dose cytosine arabinoside

Sir, Martell & Jacobs' in their article (October 1986 issue) suggest that early surgery offers 'the only realistic chance of survival' in patients developing an acute abdomen during the pancytopenic period following chemotherapy for leukaemia. This claim is made despite the fact that 3 out of 5 patients who underwent surgery died within 14 days post-operatively and all three patients who died received high-dose cytosine arabinoside. We present here our experience of the conservative management of acute abdominal problems after high-dose cytosine arabinoside treatment for leukaemia and lymphoma.

Between February 1983 and June 1986, 124 patients received 127 courses of cytosine arabinoside, 2 g/m² twice daily with or without etoposide 100 mg/m² once or twice daily for 5 days. Twenty seven patients received cytosine arabinoside alone, in 75 patients etoposide once daily was added to the regimen and in 25 patients etoposide was administered twice daily.

Nineteen patients (15%) developed an acute abdomen with severe generalized abdominal pain, diarrhoea, and paralytic ileus with absent bowel sounds, almost certainly due to cytosine arabinoside. Eighteen out of 19 patients were treated conservatively with intravenous fluids, antibiotics, platelets, granulocyte infusion and blood product support where appropriate. One patient underwent laparotomy for bowel perforation due to a locally infiltrative fungal lesion (Candida albicans) and died on the thirteenth post-operative day.

Eighteen patients were therefore treated conservatively for their episode of acute abdomen; 7 died during the

<table>
<thead>
<tr>
<th>No.</th>
<th>Age/Sex</th>
<th>Diagnosis</th>
<th>WBC x 10⁹/l</th>
<th>Platelets x 10⁹/l</th>
<th>Death (days post-treatment)</th>
<th>Contributory causes of death</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>30 F</td>
<td>AML 2nd relapse</td>
<td>0.1</td>
<td>31</td>
<td>17</td>
<td>Septicaemia</td>
<td>Post-mortem intramural haemorrhage in bowel.</td>
</tr>
<tr>
<td>2.</td>
<td>30 F</td>
<td>AML 1st relapse</td>
<td>0.5</td>
<td>33</td>
<td>17</td>
<td>Liver failure</td>
<td>2nd course of treatment in 6 months</td>
</tr>
<tr>
<td>3.</td>
<td>39 M</td>
<td>Resistant ALL</td>
<td>0.1</td>
<td>7</td>
<td>28</td>
<td>Septicaemia</td>
<td>Renal and hepatic failure</td>
</tr>
<tr>
<td>4.</td>
<td>41 M</td>
<td>AML 2nd relapse</td>
<td>0.1</td>
<td>9</td>
<td>28</td>
<td>Septicaemia</td>
<td>Renal and hepatic failure</td>
</tr>
<tr>
<td>5.</td>
<td>15 F</td>
<td>AML 2nd relapse</td>
<td>0.5</td>
<td>19</td>
<td>25</td>
<td>Septicaemia</td>
<td>Renal failure</td>
</tr>
<tr>
<td>6.</td>
<td>36 F</td>
<td>Resistant NHL</td>
<td>0.1</td>
<td>17</td>
<td>35</td>
<td>Septicaemia</td>
<td>Required ventilation for 12 days before death</td>
</tr>
<tr>
<td>7.</td>
<td>15 F</td>
<td>AML 2nd relapse</td>
<td>0.3</td>
<td>22</td>
<td>21</td>
<td>Candida septicaemia. Renal and hepatic failure. D.I.C.</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>41 M</td>
<td>Resistant AML</td>
<td>0.6</td>
<td>20</td>
<td>24</td>
<td>Septicaemia</td>
<td>Renal failure</td>
</tr>
<tr>
<td>9.</td>
<td>33 M</td>
<td>Acute promyelocytic leukaemia</td>
<td>0.3</td>
<td>23</td>
<td>14</td>
<td>Cerebral haemorrhage</td>
<td></td>
</tr>
</tbody>
</table>

AML—acute myeloid leukaemia; ALL—acute lymphoblastic leukaemia; NHL—non-hodgkin's lymphoma; DIC—disseminated intravascular coagulation; WBC—white blood cells.
neutropenic period of unresponsive septicaemia with or without multiple organ failure, one died of liver failure and one patient died of a cerebral haemorrhage (see Table I).

Martell & Jacobs cite a number of studies which suggest that surgical intervention has a role to play in leukaemic patients who are neutropenic following chemotherapy. However, none of these studies was randomized and as pointed out by several authors the patients treated conservatively were more severely ill and had lower performance status than those who underwent surgery. Such patient selection would be bound to bias the results of any retrospective analysis as to the merits of surgery as opposed to conservative management for these patients.

We report here a 50% survival rate for patients who develop an acute abdomen after high-dose cytosine arabinoside. We therefore recommend that patients who develop an acute abdomen after receiving high-dose cytosine arabinoside should be managed conservatively and our results may reflect aggressive antibiotic and blood product support.

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Reference

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