CONDITIONING REGIMEN (RIT). Infections were evaluated in view of the immune suppression the regimen provided. METHODS: Conditioning consisted of alemtuzumab ×3 (day −34 to −18), fludarabine (day −8 to −4), and melphalan (day −3). Of 23 recipients, 10 were sibling and 13 unrelated transplants. Diagnoses included bone marrow failure (7), hemoglobinopathies (2), immune dysregulation (3), immune deficiency (5), metabolic disorders (5), and Evan syndrome (1). Twelve were bone marrow, 6 peripheral blood, and 5 umbilical cord blood grafts. Infections were classified by time of onset as conditioning to day +30 (Period 1), day +31 to +100 (Period 2), day +101 to +180 (Period 3), and day +181 to +365 (Period 4). Immune reconstitution was monitored serially.

RESULTS: All but 1 patient stably engrafted donor cells (95%). The table shows the incidence, etiology, and timing of infections encountered. The frequency of infections was highest until day +100 and tapered significantly after day +180. This correlated with B cell numbers and immune globulin levels that normalized at day +180. The median absolute lymphocyte count was >1000/cu.mm and absolute CD4+ T cell number was >400/cu.mm at 6 months post-transplant. No fungal infections were encountered after day +180. Infection was documented after day +180 only 1 patient who was on multiagent therapy for extensive chronic GvHD. Acute and chronic GvHD rates were 12% each. CMV, a common pathogen associated with alemtuzumab, was detected within day +100 in 9 of 10 cases; there was no CMV infection after day +180. There were 3 infection-related deaths. Two died from *Pseudomonas aeruginosa* which pre-dated transplanted and progressed after, and I expired due to CMV disease. No deaths have occurred since instituting bacterial and fungal prophylaxis during the early post-transplant period.

CONCLUSIONS: Stable engraftment was achieved in patients at high risk for graft rejection. Infectious complications correlated with immune reconstitution kinetics and should be carefully monitored during the vulnerable period. Satisfactory immune reconstitution parameters were evident in the latter half of the first year post-transplant reducing vulnerability to infectious complications (Table 1).

### Table 1. Infections Encountered with SCT

<table>
<thead>
<tr>
<th>Time Post-SCT</th>
<th>Patients Infections</th>
<th>Bacterial</th>
<th>Viral</th>
<th>Fungal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period 1</td>
<td>23/32</td>
<td>19</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Period 2</td>
<td>20/24</td>
<td>15</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Period 3</td>
<td>14/13</td>
<td>7</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Period 4</td>
<td>11/2</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

509 THE IMPORTANCE OF INTERNAL INFORMATION SYSTEM (IS) SUPPORT TO MAXIMIZE REIMBURSEMENT EFFORTS OF A BLOOD AND MARROW TRANSPLANT (BMT) PROGRAM

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Many BMT programs are challenged with financial justification of their existence. One way to maximize reimbursement within your own facility is to induce a member of your IS department as a core member of your BMT team. Begin by identifying a person in your IS department who can work with the software applications utilized by your program. Many hospitals have an electronic medical record system, which is a repository of clinical data. Integrating this information with the existing admission/discharge/transfer systems allows for extended data analysis that can be used for monitoring reimbursement activities. This integration and reporting will require support from an IS staff member, so inclusion of this person in the BMT program will allow for improved understanding of BMT program requirements. At our center, a transplant-specific information system was developed which allowed for data to be entered by staff according to their responsibility. Refer- ral, financial, clinical, laboratory, and clerical information is en- tered and is available in real-time to all users. In addition, users can create their own ad hoc queries based on 18 categories of selection criteria and 78 display parameters. These reports can quickly show populations of transplanted patients with common characteristics and their comparative outcomes. This data can then be exported to allow for independent analysis by pulling in cost data from financial software. This advantage is carried over to the contracting/managed care staff (CMC). By looking at historical data, the CMC staff can better determine the changing costs related to diagnosis and type of transplant. Data such as readmissions, donor lymphocyte infusions, long-term follow-up, and engraftment information can be queried and can be compared to costs associated. With this information, the CMC can now better analyze the need for adjustment in payment on contractual agreements with third-party payors. As technology evolves and new drugs and treatments become standard of care, the CMC can monitor and make changes as contract renewals are considered. In addition, long-term agree- ments (3 to 5 years) can be adjusted with real data for justification. Finally, this data can be used to look at year-end reports, patient-specific reports, and payor-specific reports. This information is key to determining the financial viability of your program.

510 EVOLVING TRENDS AND IMPROVED OUTCOMES IN AN ASIAN HEMATOPOIETIC STEM CELL TRANSPLANT CENTER


Nearly 700 hematopoietic stem cell transplants have been performed at the Singapore General Hospital since 1985. Over the years, conditioning regimens, indications, choices of hematopoietic stem cells and transplant outcomes have evolved in tandem with advances and trends in the medical and scientific community. Such practices vary between countries and even between institutions within the same city. Up to September 2005, there were 76 non-myeloablative transplants and 573 myeloablative transplants. In our own center, bone marrow was the chosen source of hematopoietic stem cells (HSC) in between 100% of patients between the years 1985 to 1997, but fell to 70.5 in 1995 and 11.1% in the last one year. The percentage of patients transplanted for the various illnesses was: acute leukemia 66.7% in 1985, 42.9% in 1995, and 41.9% in 2005; chronic myeloid leukemia 33.3% in 1985, 16.7% and 3.2% in 2005; multiple myeloma 0% in 1985, 7.1% in 1995 and 22.6% in 2005; lymphoma 0% in 1985, 2.4% in 1995, and 25.8% in 2005. One hundred day transplant related mortality all the patients, which was 100% in 1985 when the program started, fell to 35.7% in 1995, 22.5% in 2001, then stabilising at about 28% in the last few years, as increasingly more complex cases were taken on. For autologous transplants, however, the transplant related mortality has remained between 3 to 5%. In this presentation of the evolving trends in HSC observed within our own institution, we also postulate on the future directions that our center and, possibly, other Asian transplant centers will take in the coming decade.