AMERICAN SOCIETY OF CLINICAL ONCOLOGY
CHICAGO, USA, 1–5 JUNE

Study warns adolescents and young adults have poorer survival from leukaemia

Adolescents and young adults (aged 16–30 years) with high-risk acute lymphoblastic leukaemia have poorer event-free survival and overall survival than younger patients (aged 1 to 15 years) on the same treatment regimens, warned a major phase III study of acute lymphoblastic leukaemia treatment.

The trial tested four treatment regimens for high-risk B-precursor acute lymphoblastic leukaemia, as reported at ASCO last year. The new analysis looked at survival based on patients' ages. Previous research suggested worse outcomes in those over 16 years of age but this is the first study large enough for direct comparison.

The study included 501 adult and young adolescent patients making it the largest cohort of this age group to date in a single cancer clinical trial; 20% of the overall trial enrollment. Results confirmed high cure rates with acute lymphoblastic leukaemia treatment regimens but revealed poorer outcomes in older patients.

Five-year event-free survival (defined as no evidence of disease) was 68% and overall survival was 79.8% in patients aged 16–30 years, compared to 80.9% and 88.4% respectively in younger patients. These differences were highly statistically significant ($P<0.0001$).

Adolescent and young adult patients had a higher relapse rate (21.3%) than younger patients (13.4%). Relapses were mainly caused by a higher rate of bone marrow relapse. The trial aimed to improve disease control in the CNS, but there was no statistically significant difference in CNS relapse between older and young age groups.

Toxic deaths that occurred after induction therapy and remission were significantly higher in adolescent and young adult patients (5.5% *vs* 2.1%).

'This study tells us that the inferior outcome for adolescent and young adult patients is the result of more resistant disease, resulting in higher rates of relapse and higher toxicity from treatment,' said Eric Larsen, medical director of the Maine Children's Cancer Program, USA. 'We have to find novel agents to better eradicate the leukaemia, but while we want to intensify therapy, we also have to reduce toxicity.'

Susan Mayor

Novel HER-2 antibody chemotherapy conjugate improves outcomes in breast cancer

The potential for improving outcomes in women with HER-2 positive locally advanced or metastatic breast cancer was demonstrated in the phase III EMILIA trial with T-DM1, a novel antibody–drug conjugate that consists of the antibody trastuzumab (Herceptin) linked to the cytotoxic drug emtansine (DM1).

The study randomized nearly 1000 women to T-DM1 or capecitabine plus lapatinib every 3 weeks. Results showed significant and clinically meaningful improvement in progression-free survival with the new agent (median progression-free survival 9.6 months *vs* 6.4 months).

Professor Kimberly Blackwell, Duke Cancer Institute, Duke University, USA

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After 2 years, 65.4% of the T-DM1 patients were alive, compared to 47.5% of the comparator group.

'The drug worked. It was significantly better than a very effective approved therapy for HER2 overexpressing metastatic breast cancer,' said Kimberly Blackwell, professor of medicine and assistant professor of radiation oncology at Duke Cancer Institute at Duke University, USA. 'As a clinician who takes care of a lot of breast cancer patients, I'm pleased that this drug has very little dose-limiting toxicity.'

Susan Mayor

Pemetrexed-based continuation maintenance improves survival

Final results from a phase III study of pemetrexed in the continuation maintenance setting, PARAMOUNT, showed a significant improvement in overall survival in patients with advanced non-small cell lung cancer treated with pemetrexed continuation maintenance.

Continuation maintenance treatment is when one of the same medicines used in first-line treatment is continued until disease recurrence in an ongoing effort to control the cancer.

Final results of this multicentre, double-blind trial, which included 939 patients, demonstrated a statistically significant 22% reduction in the risk of death (hazard ratio=0.78).

Patients achieved a median overall survival (50% were still alive) of 16.9 months from start of induction (13.9 months from randomization) on the pemetrexed continuation maintenance arm compared to 14.0 months from start of induction (11.0 months from randomization) on the placebo arm. With no active treatment, patients with advanced non-small cell lung cancer can be expected to live for about 2–4 months after their diagnosis.