Medical Xpress

Research brings new hope of renal recovery for cancer patients

April 22 2011

(PhysOrg.com) -- A new study conducted by researchers at the University of Birmingham has identified a 21 day treatment threshold to facilitate renal recovery and significantly improve survival rates of myeloma or Kahler's disease; a cancer of the bone marrow.

Led by Dr Colin Hutchison from the School of Immunity and Infection at the University of Birmingham, the research published today (21 April) in the *Journal of the American Society of Nephrology* shows that chances of survival are strongly linked to recovery of kidney damage, a common side-effect of the disease.

The second most widespread cancer of the blood, myeloma is responsible for approximately two per cent of all cancer-related deaths and causes plasma cells to grow uncontrollably. This can lead to myeloma kidney, a cause of fatal renal failure, as blockages form in the kidneys due to unmanageable quantities of Free Light Chain (FLC) proteins produced by the myeloma. Survival is strongly associated with early reduction of FLCs to reverse the kidney damage, which can be achieved by effective chemotherapy.

39 patients with myeloma kidney were monitored at the University Hospital Birmingham and the Mayo Clinic, Rochester in the United States of America as part of this research. They each received a combination treatment of direct removal of FLCs and chemotherapy in an attempt to determine whether there is a target threshold by which FLCs should be reduced to facilitate renal recovery.

Dr Hutchison explains:

"The management of patients with multiple myeloma and renal failure is rapidly changing. This research shows that the relationship between reduction in FLC concentrations and renal recovery is a linear one; there is no absolute threshold by which FLCs must be reduced, however FLC reduction at day 21 was the most significant predictor of renal recovery and chances of survival are significantly improved if there is early recovery of renal function.

"To enable 80 per cent of the population to recover renal function, a reduction of 60 per cent in FLCs was required by day 21 and the odds of recovery for patients with a reduction greater than 50 per cent was more than seven fold that for patients with a reduction less than 50 per cent, with the risk of death nearly three times lower in those with recovered renal function."

This research was partly supported by a grant from the British Renal Society and determines early reduction of FLCs as critical to patient survival. Novel chemotherapy agents, such as bortezomib, were identified as favourable treatments because they have an earlier and greater rate of myeloma response.

Provided by University of Birmingham