

EVALUATION OF KIDNEY FUNCTION OF LONG-TERM CHILDHOOD CANCER SURVIVORS

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We investigated renal function of 99 pediatric long-term survivors of leukemia and solid tumors treated according to standard protocols. Glomerular filtration rate (GFR) was assessed with the cystatin C method. Proximal tubular function was characterized by urinary B-Nag-ase enzyme activity and microalbuminuria. Distal tubular function was determined by serum/urine osmolarity. We performed genomic PCR to determine a possible influence of I/D polymorphism of the angiotensin convertase (ACE) gene on late nephrotoxicity. Endogenous antioxidant level, was determined according to beef-brain autooxidation method. Kidney function of patients was compared to that of 86 age- and sex-matched healthy children.

GFR was reduced by 22% only in Wilms tumor patients. Microalbuminuria and B-Nag-ase elevation were found in 56% of patients with a characteristic differences between different subgroups of patients. Distal tubular function was not severely impaired. Endogenous antioxidant level of patients was mildly depressed, however it did not show a correlation with impaired tubular function. In contrast to a significantly higher prevalence of the ACE gene D allele among patients suffering severe circulatory compromise during febrile neutropenic episodes, we could not find any correlation between ACE I/D polymorphism and impaired renal function in patients.

Regular checkup and aggressive supportation therapy during chemotherapy may decrease late renal toxicity in children with cancer.

