Anemia and Morbidity and Mortality

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Cardiovascular disease is the main responsible for the poor long-term survival observed in chronic kidney disease (CKD) patients on dialysis. Due to the induced alterations on cardiovascular structures, in particular left ventricular hypertrophy, anaemia, which is a frequent and early complication of CKD, not only impairs quality of life, but is also an independent risk factor for adverse cardiovascular outcomes in CKD patients. The deeply negative impact of anemia on cardiac function is mostly due to its primary role in promoting the development of left ventricular hypertrophy (LVH), that is the most typical cardiac alteration observed in CKD. Indeed, 70% of ESRD patients have echocardiographic evidence of LVH at the time of starting dialysis, indicating that the phenomenon begins well before ESRD is reached. Observational studies have clearly shown a relationship between the degree of anaemia and increased risk of mortality and morbidity. Although with discordant results, clinical studies showed that cardiovascular benefits, mainly in terms of left ventricular hypertrophy regression, may be achieved by partial correction of haemoglobin levels. Large-scale, prospective, randomized, clinical trials did not show further cardiovascular advantages with a complete normalization of haemoglobin levels above the targets recommended by current guidelines. This should be then reserved only to individual patients with particular clinical needs (for instance in patients affected by obstructive lung disease, or in young and fit patients).