

THE NUTRITIONAL AND BIOCHEMICAL STATUS OF RENAL PATIENTS APPROACHING DIALYSIS: A MULTI CENTRE AUDIT

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Problem: The NSF for Renal Services recommends the provision of both nutritional monitoring and dietary advice for patients approaching established renal failure (ERF). RA standards include biochemical and nutritional targets for this patient group. There is however a lack of data on the biochemical and nutritional status of these patients and on the dietetic input provided. Planning and undertaking an audit can be time consuming with data collection often proving challenging due to lengthy timescales and both the quality and quantity of information needed in order to generate data for robust analysis.

Purpose: To undertake a multi-centre regional audit, within a short timescale, in order to audit the nutritional status, biochemistry and dietetic input of patients approaching ERF 6 months prior to and at commencement of dialysis.

Design: A working party of dietitians from around the region met on five occasions to plan, develop and co-ordinate the audit with workload distributed, within the working group, to maximize everyone's expertise. The audit included all CKD patients commencing dialysis (HD or PD) for the first time and was undertaken for 3 months, in 13 renal units within the region. Demographic, biochemical and nutritional data were collected for each patient 6 months prior to starting dialysis (retrospectively), at the start of dialysis and after 1 month. Those at nutritional risk were determined using RA criteria, Malnutrition Universal Screening Tool (MUST) and mid-arm circumference (MAC).

Findings: Within one year, we were able to plan, pilot and complete a regional audit of patients commencing dialysis as a result of CKD. Setting realistic objectives and timescales for each stage of the project ensured that the audit was completed within the original time frame, and a high reliance on e-mail and telephone communication kept costs and time to a minimum.

Of the 210 patients commencing dialysis, 61 (28%) were late referrals (LRs) (i.e. referred to Nephrologist < 4 months before start of dialysis). 23% of patients had not seen a renal dietitian in the 6 months prior to starting dialysis, however half of these were LR. 66% attended a MDT clinic. 23% had PO₄ >1.9mmol/l 6 months prior to the start of dialysis. At commencement of dialysis this increased to 51%; however this was higher amongst LR than those attending an MDT clinic (57% and 47% respectively).

RA criteria found 86 patients (41%) to be at risk of under-nutrition though this was mainly linked with a low serum albumin. 78 (38%) had a low albumin level; 1% had a BMI <18.5 and 5% (of those recorded) had > 10% wt loss. 48% of LR had a low albumin level compared with 34% in those referred early. CRP correlated negatively with albumin. MUST identified 19% as at high risk of under-nutrition; but 27% for LR. 50% of patients had MAC recorded, 24% were <10th centile, with half of these <5th centile.

Conclusion: Multi centre working has allowed skills, knowledge and expertise to be pooled resulting in a robust data set for analysis with relevance to both dietitians and the wider multi-professional renal team. The results showed that the majority of patients had seen a dietitian in the 6 months prior to commencing dialysis; though this was less likely among LR. Phosphate control was an extensive problem but appears to have been better managed within an MDT setting. Patients referred late had poorer phosphate control and were at higher risk of under-nutrition; factors that are both linked with increased mortality. The degree of under-nutrition varied between the different nutritional tools. A range of sensitive nutritional markers recorded regularly may be more helpful in determining nutritional risk rather than relying solely on the RA standards.

Relevance: This work demonstrates that a multi-centre audit is achievable in a relatively short timescale and can produce invaluable results. Using a small working group allows audits to be kept focused and the workload to be distributed. This is the first audit to evaluate the biochemical and nutritional status of patients commencing dialysis in relation to the Renal NSF and RA standards. The poor PO₄ control and high risk of under-nutrition support the need for regular biochemical and nutritional monitoring by the MDT for this vulnerable patient group. The success of this audit should encourage other professions within the renal MDT to use similar multi-centre working.