**Introduction**

Diabetic nephropathy is the main cause of end stage renal disease accounting for 16.7%1, with more having diabetes as a co-morbidity. NICE guidelines recommend that all patients with diabetes should be offered a structured education programme to suit their needs1. Many patients with chronic kidney disease (CKD) are required to follow additional dietary restrictions to manage complications of kidney disease. Currently, there are no structured education programmes in the UK aimed at managing both diabetes and renal diets. The aim of this service development was to modify an existing, national evidenced based validated Diabetes Education Programme (X-PERT), to meet the additional needs of people with CKD and to pilot this in people with diabetes and Stage 4 CKD.

**Methods**

Patients with a diagnosis of CKD 4 and Type 2 diabetes receiving insulin or oral hypoglycaemic therapy and able to understand written and spoken English were invited to attend a 5-week 2 hr group diabetes structured education programme. The primary outcome of changes in glycaemic control and secondary outcomes of nutritional status, diabetes knowledge, self-care activities, self-efficacy, diabetes-related stress and treatment satisfaction were collected pre and post education and at 3 months. Paired t tests and Wilcoxon Signed-Rank Test statistical testing was performed.

**Results**

17 participants (9M, 8F), mean age of 68.3 years, had a diabetes diagnosis for an average of 22 years. 12 (71%) completed the programme. Follow up data is available for n=11 post education and n=8 at 3 months No significant differences were observed post education programme or at 3 months in mean changes in glycaemic control and nutritional status (Table 1).

**Table 1: Glycaemic control and nutritional status outcomes**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Pre (n=11/17) | Post (n=11/17) | Pre (n=8/17) | 3 mths (n=8/17) |
| Mean fasting BG (mmol/l) | 9.3 ± 2.71 | 9.1 ± 3.13 | 10.1 ± 2.67 | 9.8 ± 2.81 |
| Mean post prandial BG (mmol/l) | 10.6 ± 2.49 | 10.5 ± 2.11 | 10.9 ± 2.59 | 11.4 ± 2.39 |
| HbA1c (mmol/l) | 53 ± 5.1\* | 57 ± 8.5\* | 64 ± 12.9 | 63 ± 12.1 |
| BMI (kg/m2) | 33.8 ± 10.36 | 33.5 ±10.52 | 34.3 ± 12.13 | 34.09 ± 12.60 |
| Waist circumference (cm) | 114.0 ± 15.04 | 113.0 ± 16.23 | 113.7 ± 16.61 | 112.5 ± 17.63 |

\*n=5 only; BG: blood glucose

Post the education programme, there was a significant improvement in diabetes knowledge (p=0.012), self-care of diet (p=0.042) and feet (p=0.04) and self-efficacy (p=0.029). At 3 months post education, this improvement remained for diabetes knowledge (p=0.025), self-care of diet (p=0.021) and self-efficacy (p=0.027) with additional improvement in self-care of exercise (p=0.029). No differences were observed in diabetes-related stress, self-care of blood glucose testing or treatment satisfaction after attending the programme or at 3 months.

**Conclusions**

Attendance indicates that many patients with CKD are keen to learn about diet. A modified diabetes structured education programme improved some important diabetes-related outcomes such as knowledge, self-care activities and self-efficacy which was sustained at 3 months though changes in glycaemic control and nutritional status were not observed at this time*.* This may be due to small numbers or insufficient time to observe changes in behaviour to improve these outcomes. Analysis of food diaries will provide further important information on potential changes in food choice.

1. UK Renal Registry 19th Annual Report 2016.

2. National Institute for Health and Care Excellence. (2011). Diabetes in adults.