Abstracts from the 6th Joint Meeting of ABCD & UKKA 2023

11th October 2023, National Conference Centre, Birmingham.

Br J Diabetes 2024;24:ONLINE PUBLICATION
https://doi.org/10.15277/bjd.2024.454

Abstract ID: 516

The association between glycaemic control and survival in differing cohorts of patients with diabetes on peritoneal dialysis: results from the PDOPPS

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Objectives: Globally, 40% of people receiving peritoneal dialysis have a diagnosis of diabetes. High-quality data on the potential impact of improving glycaemic control are needed to inform the KDIGO recommendation to individualise HbA_{1c} targets.

Methods: The association between first HbA_{1c} and all-cause mortality in people on peritoneal dialysis (PD) for kidney failure recruited into PDOPPS1(2014-2017) and PDOPPS2(2018-2022) identified as diabetic was estimated using Cox proportional hazards models adjusted for age, sex, race, country, albumin, haemoglobin and co-morbidities. To inform HbA_{1c} individualisation, subgroup analyses drawn from these adjustment variables were performed.

Results: From 24,259 individuals recruited into PDOPPS, 13,646 were identified as diabetic. Of these, 9,722 had HbA_{1c} performed after a mean of 11.2 months' PD therapy, mean follow-up 17.2 months. Mean HbA_{1c} was 6.9%. Mean HbA_{1c} ranged from 6.4% in Japan to 7.3% in Canada. In people with type 2 diabetes (T2DM), relative to HbA_{1c} 6.0-7.0%, there was weak evidence for increased all-cause mortality for HbA_{1c} >9% (HR 1.18, p=0.067), becoming more robust in those aged <65 years (HR 1.4, p=0.01). In individuals with albumin >3.0g/dL, or those with no previous coronary artery disease (CAD), the threshold for significantly increased mortality dropped to >8% (HR ~1.2). The hazard ratio for mortality for the >8% threshold climbed to 1.92 for those aged <65 years, with both serum albumin >3.0g/dL and no previous CAD.

Conclusions: In diabetic adults receiving PD for kidney failure, the associations seen between HbA_{1c} and mortality argue for tighter individualised targets for particular patient subgroups (younger, non-inflamed and without established CAD) than clinical practice guidelines have previously suggested.

Abstract ID: 517

Efficacy and safety profile of SGLT2 inhibitors in patients with T1DM: single-centre real-world experience

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Sodium-glucose cotransporter-2 inhibitors (SGLT2i) have significant metabolic and cardiorenal benefits in type 2 diabetes mellitus (T2DM). Several trials have been undertaken looking at safety and efficacy profiles in patients with type 1 diabetes mellitus (T1DM). The use of SGLT2i in this population showed multiple advantages, including improved glycaemic outcomes, lower insulin dose, weight loss, reduced blood pressure and albumin: creatinine ratio (ACR), as well as potential cardio-renal protective effects. However, more safety data are needed as they increase the incidence of diabetic ketoacidosis (DKA) by a factor of 2-4.

A retrospective analysis was undertaken to evaluate SGLT2i efficacy and safety in T1DM patients taking these agents for more than six months. Twenty-nine patients (14M,15F, 34-65 years) were identified: 20 were taking dapaglifozin, eight canaglifozin and one empaglifozin. 12 patients commenced SGLT2i to optimise diabetes control (when previously licensed for T1DM) and 17 for proteinuria. Median duration of use was 28 months (8-108 months). At the latest follow-up there was a significant reduction of diastolic blood pressure (p=0.01, -4.7 mmHg), HbA_{1c} (p<0.01, -6.8mmol/l) and ACR (p=0.03, -26mg/mmol) levels. Four patients (13.8%) developed DKA; one after covid vaccination, one post-acute coronary syndrome, one post-infection and one with no cause identified. Two patients (6.9%) stopped SGLT2i treatment (because of DKA and recurrent genital thrush).

This retrospective analysis shows that SGLT2i may contribute to improved HbA_{1c} and reduction in albuminuria in patients with T1DM; however, their safety remains a concern due to high incidence of DKA. Findings suggest that T1DM patients with nephropathy should be considered for these agents following appropriate education.

Abstract ID: 454

Efficacy of continuous glucose monitoring (CGM) in people with diabetes on dialysis

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Background: Patients with diabetes on dialysis experience wide variations in glucose levels, leading to increased risk of hypoglycaemia. Due to the inaccuracies in HbA_{1c} in dialysis patients, the JBDS-IP and KDIGO Diabetes Work Group recommend the use of CGM in this population. We conducted a systematic review to examine current evidence for CGM use and its impact on clinical outcomes.

Methods: The MEDLINE and Embase databases were searched. Studies were eligible if they were clinical or observational trials in adults with diabetes on dialysis, had CGM as an intervention

and reported on glycaemic outcomes. Patient characteristics, intervention, follow-up and glycaemic outcomes were extracted from eligible studies. Quality assessment was conducted using the NHLBI assessment tool.

Results: Of the 936 citations identified, 49 duplicates were removed. Then 887 were screened by title and abstract. Nine full texts were reviewed and a further seven were excluded due to duplications and failure to meet the selection criteria. Data were extracted for two studies. Both were prospective, before-and-after interventional studies with no control group or blinding and deemed to be of 'good' quality.

In the study by Joubert *et al* (2015) the mean CGM glucose level was 8.3mmol/L at baseline and 7.7mmol/L at the end of the CGM period ($p<0.05$). HbA_{1c} decreased from 6.85% to 6.46% at the end of 12 weeks ($p<0.05$). The number of insulin dose adjustments was higher during the CGM compared to the SMBG period (2.1 vs 1.4 respectively, $p<0.05$). Mean CGM was lower on dialysis days (7.6mmol/L) than without (7.8mmol/L, $p<0.05$).

Képénékian *et al* (2014) reported that after three months with a CGM-adapted basal bolus insulin regimen, HbA_{1c} decreased from 8.4% to 7.6% ($p<0.01$). Similarly, mean CGM glucose values decreased from 9.9 to 8.9mmol/L ($p=0.05$). The frequency of glucose values >10mmol/L decreased from 41% to 30% ($p<0.05$), without a significant increase in the frequency of hypoglycaemia (<3.3mmol/L). Insulin requirements increased from 70IU/d to 82IU/d ($p<0.01$), without significant changes in body weight.

Conclusion: Evidence demonstrating the impact of CGM on glycaemic outcomes in patients with diabetes on dialysis is lacking. Further trials with bigger sample size and longer follow-up are needed to ascertain the benefits of CGM in these patients.

Abstract ID: 504

UK Kidney Association Clinical Practice Guideline: Sodium-glucose co-transporter-2 (SGLT-2) inhibition in adults with kidney disease: 2023 update

Roddick AJ, Herrington WG, Frankel AH, on behalf of the UK Kidney Association Clinical Practice Guideline: Sodium-glucose co-transporter-2 (SGLT-2) inhibition in adults with kidney disease working group

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Large placebo-controlled trials have demonstrated both kidney and cardiovascular benefits of SGLT-2 inhibitors in people with chronic kidney disease (CKD) at risk of progression. Data from the EMPA-KIDNEY and DELIVER trials and subsequent collaborative meta-analysis have recently expanded the available evidence. The UK Kidney Association Clinical Practice Guideline on Sodium-glucose co-transporter-2 (SGLT-2) inhibition in adults with kidney disease 2023 update was developed to facilitate rapid implementation of recent evidence into UK clinical practice. Recommendations were updated by the guideline working group after completing an updated systematic review of the published trial evidence.

The evidence supported updates to expand a previous grade 1 recommendation for the use of SGLT-2 inhibition in CKD to include people with eGFR of 20-45 mL/min/1.73m^2 irrespective of urinary albumin-to-creatinine ratio (uACR), or in people with eGFR >45 mL/min/1.73m^2 and uACR >25 mg/mmol irrespective of diabetes status. We suggest that clinicians consider initiating SGLT-2 inhibition in people with eGFR <20 mL/min/1.73m, or in those with eGFR 45-60 mL/min/1.73m^2, type 2 diabetes and uACR <25 mg/mmol, and we recommend that, once initiated, SGLT-2 inhibition is continued until the need for kidney replacement therapy arises. We make additional recommendations for use of SGLT-2 inhibition in people with specific medical conditions, including T1DM, kidney transplants and acute decompensated heart failure. The 2023 guideline update will inform clinicians across an area of rapidly emerging data, and encourage appropriate use of SGLT-2 inhibitors in patients with CKD where evidence supports their use. The full clinical guideline is available at: https://guidelines.ukkidney.org/

A summary of the full version of the 'UK Kidney Association Clinical Practice Guideline: Sodium-Glucose Co-transporter-2 (SGLT-2) Inhibition in Adults with Kidney Disease: 2023 UPDATE' is currently under review with BMC Nephrology. Note that the present abstract is not the same as that submitted to BMC Nephrology, but covers the same material. The full clinical guideline is also available on the UKKA website.

Abstract ID: 505

Audit of haemodialysis patients with diabetes using FreeStyle Libre sensors to assess if there is any difference between blood glucose levels on dialysis days vs non-dialysis days

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This study was undertaken as there were no local data assessing the use of FreeStyle Libre in haemodialysis patients. The study aimed to assess whether there was any difference in blood glucose levels on dialysis days vs non-dialysis days.

There were 69 patients on dialysis at the base unit, of whom 21 people had diabetes.

42.8% were under the diabetes secondary care team, with 55% using a FreeStyle Libre sensor. At the time of the audit there was only access to the base hospital FreeStyle Libre view account.

Of the five people using a FreeStyle Libre sensor, three patients had type 2 diabetes (T2DM).

Data were missing in the three patients with T2DM because they did not scan sufficiently. Two of them were unable to upload the data themselves so had to rely on Health Care Professionals (HCPs).

No significant trends were identified in the two patients with type 1 diabetes (T1DM), whether they were uploading this information themselves or relying on HCPs.

Although the study set out to look at blood sugar control on dialysis versus non-dialysis days, it has highlighted other issues:

- Patients' poor performance regarding scanning frequency and data downloads
- Patients unaware of technology updates and device support
- Lack of access to community and other local hospital Libre accounts.
- No funding for a dedicated diabetes specialised nurse to provide support to patients on the dialysis unit.

In conclusion, patients who are initiated on any diabetes technology require ongoing education, support and assessment from all members of both the renal and diabetes MDT.

Abstract ID: 506

Challenges of treating nephrogenic diabetes insipidus in a patient with T2DM and CKD

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Case: A 68-year-old man with type 2 diabetes (T2DM), chronic kidney disease (CKD), anaemia of chronic disease and bipolar affective disorder and depression was admitted after a fall. He was dehydrated but haemodynamically stable. There was a history of lithium therapy for 20 years, stopped eight years previously. His biochemical profile revealed acute kidney injury (AKI) on CKD (baseline serum creatinine was 420 [normal range 59-104 umol/L], serum Na 155 mmol/L, serum potassium 4.1 mmol/L, urea 27.2 mmol/L [2.5-7.5 mmol/L], creatinine 556 umol/L [59-104 umol/L] and eGFR 12mL/min/1.73m^2. Urinary protein/creatinine ratio was raised at 448 mg/mmol (0-99 mg/ mmol). HbA_{1c} was 51 mmol/mol, myeloma screen was normal. There was negative fluid balance (average of 2,200 ml/day) and urine output was consistently greater than 3 litres in 24 hours. Serum osmolality was 351 mosm/kg and urine osmolality 178 mosm/kg. Co-peptin levels were elevated at 155.4 (1-13.8 pmol/L).

A water deprivation test revealed dilute urine before and after 2 mcg IM desmopressin (DDAVP) with high urinary output, consistent with nephrogenic diabetes insipidus. Urinary tract ultrasound scan revealed dilated extrarenal pelvis of the right kidney. Both kidneys had increased echogenicity with poor corticomedullary differentiation. Hypernatraemia was initially treated with intravenous 5% dextrose infusion with input/output monitoring. Once the hypernatremia resolved we initiated bendroflumethiazide (5mg/day) and then desmopressin (200 mcg twice /day) despite a diagnosis of nephrogenic and not central diabetes insipidus. Discussion: nephrogenic diabetes insipidus in our patient with diabetic nephropathy seems to have been on account of past treatment with lithium on a background of CKD complicated by features of obstructive uropathy. Treatment with supraphysiological doses of desmopressin and thiazide diuretic helped resolve the polyuria.

Abstract ID: 507

Managing diabetic nephropathy in the preconception diabetes clinic: when to stop angiotensin blockade? A case report

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A 28-year-old woman presented to the diabetes preconception clinic with type 1 diabetes mellitus (T1DM) diagnosed 18 years before, hypertension, diabetic nephropathy and severe, non-proliferative diabetic retinopathy and maculopathy. She was taking insulin lispro and detemir in a basal-bolus regimen, amlodipine and losartan. Her blood pressure (BP) was 169/115mmHg, creatinine 123µmol/L, eGFR 46ml/min/1.73m^2, urine PCR 553mg/mmol and HbA_{1c} 100mmol/mol. Her BP improved with the addition of indapamide, nifedipine and methyldopa, and subsequently losartan was stopped to minimise the risk of foetal anomalies, as advised by NICE (2015). However, this precipitated a rapid deterioration in renal function (eGFR 17ml/min/1.73m^2). Pregnancy was therefore cautioned against, losartan immediately resumed, and all other antihypertensives stopped. Although this prevented further kidney dysfunction, end-stage renal failure persisted and, two years later, she received a pre-emptive simultaneous kidney-pancreas transplant. This was complicated by post-transplant small bowel lymphoma with bowel perforation, and chronic rejection of both transplanted organs.

Evidence is emerging that angiotensin receptor blockers (ARBs) and angiotensin-converting enzyme inhibitors (ACEIs) are in fact safe during the first trimester (Porta *et al*., 2011; Polifka, 2012; Lewis and Maxwell, 2013; Pucci *et al*., 2015). Yet, NICE (2015) guidance remains ambiguous, recommending that these drugs be discontinued either pre-conception or at the first positive pregnancy test. Given that diabetic nephropathy confers one of the highest risks for adverse maternal and foetal outcomes, this case - along with a growing body of literature - highlights the importance of continuing ARBs/ACEIs for their crucial maternal renoprotective effect until pregnancy is confirmed.

Abstract ID: 509

Prevalence and management of chronic complications in patients with diabetes and advanced chronic kidney disease: a retrospective audit

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Current guidelines recommend that all patients with chronic kidney disease (CKD) stage 3b or higher should be monitored and treated for anaemia, mineral bone disorder (MBD) and metabolic acidosis. We audited the prevalence and management of these complications in a cohort of patients with diabetes and advanced CKD.

A retrospective audit was undertaken using KDIGO guidelines as standard. We included patients with (a) diabetes (b) eGFR between 30 and 15 ml/min/1.73m^2) and (c) attending diabetes clinics as of 30/09/2022. Electronic patient records were used

to collect data. The following definitions were applied: anaemia as Hb <13g/dl (M) and <12g/dl (F), MBD as vitamin D <40nmol/l plus raised PTH, acidosis as bicarbonate <22meq/l.
Data for 192 subjects were analysed. Mean age (SD) was 73 (+/-11) years. There were no significant differences in general characteristics between the ethnic groups, except for albuminuria which was significantly greater in the non-European groups. 93.4% of patients had anaemia, 81.2% had MBD and 82.8% had metabolic acidosis. 33.9% of patients had all three complications. Of those with anaemia, only 22% were receiving treatment, and of these only 36.8% were treated adequately with a Hb of >10g/l. Corresponding figures for MBD were 47.6% treated, 42% optimally corrected; for metabolic acidosis 40% treated, 53% optimally corrected. There were no significant differences between ethnic groups in prevalence or treatment of these complications.
The prevalence of CKD-related complications is high. The management of these complications is suboptimal, however. Increased emphasis on the management of these complications is required to improve outcomes in patients with advanced CKD.

Abstract ID: 511

Addressing multicultural dietary demand in dietetics: a handbook for dietitians

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The UK food composition book contains limited information on multicultural diets and there is a need for inclusion of a wider range of food composition from other countries. Up to 96% patients from BME (Black and minority ethnic) background in London have requested ethnic dietary advice (unpublished data). It has been documented that Black and South Asian ethnic groups are more likely to require dialysis compared to their Caucasian counterparts. We identified many initiatives that developed culturally relevant dietary resources for patients but there are only limited resources available for dietitians or health professionals. This gap in resources has led to compilation of food composition information from other countries to support health professionals, especially dietitians working with patients from ethnic minority backgrounds, to deliver culturally relevant low-potassium dietary advice. Due to the vast variety in ethnic minority diets and in response to feedback from patients and health professionals, this handbook focused on low-potassium dietary advice for African and Caribbean, Chinese and Far Eastern, Eastern European and South Asian ethnic groups. The handbook not only includes potassium content of foods and drinks but also provides recommended daily potassium distribution, recommended ways of consumption and more than 150 items in the pictorial glossary.
This handbook supports dietitians in devising individualised culturally appropriate low-potassium dietary advice as part of the management of hyperkalaemia.

Abstract ID: 512

Title to be provided

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A 77-year-old man, recently arrived in the UK, presented with a 3-day history of reduced oral intake, followed by generalized abdominal pain, nausea and vomiting.
He was known to have type 2 diabetes (T2DM), to be on basal-bolus insulin and to have ESRD needing regular hemodialysis. His last dialysis session was a week before he arrived in the UK. Surprisingly, metformin was included in the drug list.
Upon arrival he was severely hypoglycaemic (0.7 mmol/L); this was treated accordingly. Further assessment revealed left upper limb weakness and facial asymmetry. Investigations revealed a ketone level of 6 mmol/l, pH 7.11, bicarbonate 6.6 mEq/l, lactate 15.2 mmol/l, urea 28 mmol/L, creatinine 904 micro mol/l, eGFR 4 ml/minute, sodium 135 mmol/l and potassium 5.5 mmol/l.
CT scan of the head had shown an acute focal right parietal cerebral infarct.
Early intensive supportive measures were adopted including: dextrose 10%, variable intravenous insulin infusion, metformin discontinuation, Pabrinex injections, stroke management, and early resumed renal replacement therapy.
Despite those measures, his ketosis persist for three days. Then a slow and steady resolution was obtained in the subsequent days. On day 6 of his hospital admission there was a complete resolution of metabolic acidosis, dropping of lactate into 1.2 mmol/l and ketone to 0.6 mmol/l.
We reported a challenging case in which starvation secondary to stroke, improper metformin use and missed dialysis sessions contributed to metabolic ketoacidosis with hyperlactatemia and severe hypoglycemia. Applying a pragmatic intensive approach of supportive measures can result in reasonable outcomes.

Abstract ID: 513

The final frontier: identifying eligible renal transplant recipients for third-line management of diabetic kidney disease

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In 2023, non-steroidal mineralocorticoid antagonism (ns-MRA) became licensed as adjunctive therapy for patients with diabetic kidney disease (DKD), specifically in type 2 diabetes mellitus (T2DM). However, kidney transplant recipients (KTR) remain excluded from recent clinical trials and therefore the results are not applicable.

We identified proteinuric diabetic patients eligible for finerenone in our prevalent transplant population (n=289) using the UK licensing criteria: eGFR 25-60; urine ACR; and potassium <5 mmol/L. We screened patients by type of diabetes and the standard of care (SOC) triad in treating DKD treatment: Renin Aldosterone Blockade (RAS blockade), SGLT2i inhibition and achieving blood pressure target.

We found 94 (33%) diabetic kidney transplant recipients. 35 had an abnormal microalbuminuria ratio. 12 of these were excluded due to eGFR. Three patients had a serum potassium over 5 mmol/L. We identified 20 (7%) eligible patients, eight of whom were not established on first-line therapy (RAS blockade). Three of the 20 had T1DM. Three of the 20 (15%) were on an SGLT2 inhibitor. 12/20 (60%), or 4% of our transplant cohort, would qualify for ns-MRA therapy if this were made available.
We need to identify more eligible renal transplant recipients and establish ACE/ARB therapy in anticipation of future phase 3 studies in ns-MRA use with this cohort. We recognise the need for further evidence to confirm safety and efficacy in transplant recipients but overall look forward to a culture shift in offering ns-MRAs and other novel therapies for DKD to a greater number of suitable patients.

Abstract ID: 514

Dapagliflozin for treatment of SIADH-induced hyponatraemia in an older patient with T2DM

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A 86-year-old woman with type 2 diabetes mellitus (T2DM) and recurrent admissions with symptomatic hyponatraemia due to idiopathic inappropriate antidiuretic hormone secretion (SIADH) was readmitted with confusion, altered level of consciousness and an acute drop in serum sodium concentration despite reported compliance with the fluid restriction of 1.5/L/day at home.
She was clinically euvolemic. Serum sodium was 120mmol/L and urea 8.7mmol/L. Urinary sodium and osmolality were 31mmol/L and 337mOsm/kg, respectively. Serum osmolality was 267mOsm/kg. Thyroid function test results were within normal limits and a morning cortisol was robust at 534nmol/L. Her HbA_{1c} was 55mmol/L.
Despite supervised fluid restriction of 750ml to 1.5L/day over five weeks, serum sodium levels fluctuated between 123-130mmol/L and she remained confused. Dapagliflozin 5mg/day was commenced on the fifth week. Serum sodium rose and remained between 132-134mmol/L over the following 20 days, with fluid restriction continued at 1.5 litres/day. Family members were educated on sick day rules and possible side effects of dapagliflozin, including ketosis, dehydration and genitourinary infection. Serum sodium concentration at three months post-discharge was 137mmol/L, in the normal range, without deterioration of urea and creatinine. Her MMSE improved to 20/30 from 15/30 after commencement of dapagliflozin.
Up to 55% of patients with SIADH fail to respond adequately to fluid restriction alone. Inhibition of the SGLT-2 channel by SGLT2 inhibitors leads to glycosuria, resulting in an osmotic diuresis and urinary free water excretion. This case illustrates that dapagliflozin can safely improve and maintain serum sodium concentrations and alleviate symptoms in an elderly diabetic patient with SIADH.

Abstract ID: 518

Audit on the detection and management of early hyperglycaemia post-renal transplantation: a single-centre experience

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After renal transplantation, hyperglycaemia is common due to reduced insulin secretion and increased insulin resistance associated with the use of high-dose immunosuppressive medications, such as calcineurin inhibitors and glucocorticoids, during the peri- and postoperative period. Appropriate monitoring and treatment of hyperglycaemia during the early postoperative period reduce the risk of poor outcomes, including delayed graft function and post-transplant diabetes mellitus.
We conducted an audit on the detection and management of hyperglycaemia in 30 renal transplant patients for four days immediately postoperatively at a tertiary centre between September 2022 and January 2023, based on the ABCD and Renal Association guidelines on the detection and management of diabetes post solid organ transplantation. Among those without pre-existing diabetes (n=19), 32% had capillary blood glucose (CBG) checked at least once daily. Of all the once-daily CBG readings (n=29), only 10% were afternoon readings. Among those with pre-existing diabetes (n=11), only 18% had CBG readings at least four times a day each day. One patient, a diet-controlled diabetic, experienced hyperglycaemia at least twice within 24 hours, with CBG levels of 11-13.9 mmol/L, and was not initiated on any hypoglycaemics during this admission. Among patients with CBG >14 mmol/L at least twice within 24 hours (n=13), 23% were started on insulin, 15% had their existing insulin uptitrated, and 23% experienced no change in their medications. Our findings indicate a gap between our local practice and national guidelines, underscoring the need to educate physicians and nurses on the detection and management of hyperglycaemia immediately post-transplantation.

Abstract ID: 519

New clinical pathways to transform identification and management of early stage Chronic Kidney Disease (CKD) in people with and without diabetes across London: implementing '3 key actions within 3 months to save lives'

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CKD is a major problem for population health, and 30% of adults with type 2 diabetes (T2DM) have CKD. CKD is a major risk factor for increased cardiovascular disease and mortality in people with T2DM. Preventing CKD and its progression is a key objective to improve outcomes in people with T2DM.
Recent trials have transformed the evidence base for Sodium-glucose co-transporter-2 inhibitors in CKD. We used this new

evidence in pathways we developed to support primary care to identify and optimise CKD management early in people with/at risk of CKD.

The LKN brought together London clinicians (nephrologists, diabetologists, GPs and AHPs) to produce three pathways that align with NICE, UKKA and ABCD recommendations. These are:

1. CKD Early Identification Pathway
2. CKD Optimisation Pathway for adults with T2DM and CKD
3. CKD Optimisation Pathway for adults with albuminuria but without T2DM

The early identification pathway is a kidney health check for adults with diabetes or hypertension. It includes both the uACR and eGFR test, and emphasises the importance of uACR testing. The optimisation pathways focus on three key actions within three months to save lives in those with and without T2DM.

These pathways were launched in September 2022 and are now integrated into official CKD guidelines across London Integrated Care Systems.

Supporting implementation of our pathways has provided valuable insight into the barriers and enablers to better CKD care across London. We will be evaluating our pathways to demonstrate impact on patient care and to help identify areas for improvement.

Abstract ID: 521

Exploring attitudes towards motivational interviewing amongst healthcare professionals caring for people with diabetes

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Many people with diabetes (PWDs) face obstacles in adhering to recommended health behaviour practices. Motivational interviewing (MI) is a patient-centred approach that addresses these challenges. This study evaluates attitudes towards MI amongst diabetes healthcare professionals (HCPs), exploring factors that shape their attitudes and providing recommendations for improved integration.

Qualitative, remote semi-structured interviews with five HCPs, including consultants, diabetes specialist nurses and a medical registrar, were used to explore the individual experiences and perceptions towards MI. Interviews were digitally recorded and transcribed verbatim.

Four overarching themes were identified: (1) understanding/misunderstanding of MI and its concepts; (2) beliefs and attitudes towards MI; (3) individual demographic factors contributing towards MI; (4) suggestions for improved integration of MI into clinical practice.

Participants demonstrated varied levels of understanding. Time constraints and patient engagement were identified as important factors influencing the feasibility and effectiveness of MI.

The themes identified highlight the juxtaposition between optimism towards MI and the challenges associated with implementing it in practice. Considerations should be made towards tailoring MI for specific patient groups, including younger PWDs and those experiencing bereavement. Enhanced MI education and training should be offered to HCPs earlier in their careers.

This study investigated attitudes towards MI amongst diabetes HCPs. Diabetes HCPs recognise the value of MI as a tool for behaviour change but its implementation is limited by multiple challenges. Future research should be conducted to explore the attitudes of other diabetes healthcare providers and to encourage multidisciplinary collaboration to unlock the full potential of MI in improving patient outcomes.

Abstract ID: 522

SGLT2 inhibitors (SGLT2i) in patients with type 1 diabetes (T1DM) and chronic kidney disease (CKD): why are we holding off?

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People living with T1DM who develop proteinuric CKD should be considered for SGLT2i, but adequate risk assessment of DKA related to poor glycaemic control needs to be made by the renal specialists. We undertook a survey to assess the competence and confidence of clinicians in prescribing SGLT2i in this group. 50% of clinicians have initiated SGLT2i, and of those most had limited experience (up to five patients). Three-quarters of clinicians preferred to leave decision-making to the diabetes team, thus delaying treatment.

A young woman with T1DM with CKD with proteinuria presented to the renal team and was initiated on ramipril. She was not commenced on SGLT2i due to concerns about DKA. In 2021, she became pregnant but unfortunately experienced a miscarriage due to a foetal anomaly. Her renal function and glycaemic control had further deteriorated by then.

It is estimated that approximately 30-50% of individuals with T1DM develop diabetic kidney disease during their lifetime. Recent studies such as InTandem 1, DEPICT-1, EASE-2 and EASE-3 have reported positive outcomes in these patients but there needs to be focus on the risk assessment for DKA due to the fourfold increase in the risk. We recommend MDT working to develop appropriate strategies and algorithms to access and minimise the risks of DKA and delayed treatment in this group.

Abstract ID: 523

Diabetic ketoacidosis in an anuric diabetic kidney disease patient

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Introduction: Diabetic ketoacidosis (DKA) is a potentially life-threatening complication in people with diabetes mellitus (DM). It happens predominantly in patients with type 1 DM (T1DM), but it can occur in those with type 2 DM (T2DM). DKA occurs when the insulin supply cannot meet the demand, leading to hyperglycemia and ketoacidosis.[1]

DKA is uncommon in patients with end stage renal failure (ESRF) and anuria secondary to diabetic kidney disease (DKD) on

hemodialysis (HD). However, these patients are at high risk of infective and ischaemic insults which can trigger DKA.[2]

Pathophysiology:

In DKD patients with ESRF and anuria on dialysis presenting with DKA, things to consider are:[3]

a) Absence of osmotic diuresis
b) Reduced insulin deficiency
c) Increased risk of hypoglycemia with treatment
d) Fluid replacement as per volume status
e) Haemodialysis +/- isolated ultrafiltration (for treatment-resistant pulmonary oedema).

Case report: A 32-year-old female with a known background of T1DM with gastroparesis and ESRF from DKD presented with acute abdominal pain and vomiting following her routine hemodialysis session. She was anuric and on thrice-weekly hemodialysis.

Her VBG showed features of DKA with pH 7.1, HCO3 11.5, glucose 13.2 mmol/L, and ketones>6. Her body weight on admission was 76.4 kg while her target dry weight was 54 kg.

She was initially treated for DKA with FRII as per protocol and her BP went up to 210/117mmHg. Examination showed features of fluid overload, so she was started on dry insulin regimen and hemodialysis. Her BP, glucose and fluid overload were gradually controlled with daily hemodialysis.

Discussion: DKD patients with ESRF can present acutely with a range of symptoms affecting multiple organ systems. Fluid overload and hyperkalemia are common in dialysis-dependent patients due to difficulty in adhering to fluid and diet restrictions and poor renal clearance. When these patients develop DKA, careful consideration should be given to management as following the usual protocols can result in life-threatening volume overload, hypoglycemia and hyperkalemia.

Patients on hemodialysis with anuria and hyperglycemia can present with hypovolemia, euvolemia or hypervolemia. Fluid replacement (with small boluses of isotonic fluid with reassessment) should only be considered in hypovolemic patients.[4] Intravenous insulin replacement is the cornerstone of the management of DKA. Factors to consider in FRII dose are reduced elimination of insulin in patients with ESRD with anuria and insulin resistance in uremic patients. These patients usually have a higher initial serum potassium, hence potassium replacement with FRII can lead to hyperkalemia.

Conclusion: DKA is rare in hemodialysis-dependent anuric patients due to improved glycaemic control resulting from reduced renal insulin breakdown, excretion and renal gluconeogenesis. These patients have less risk of dehydration and electrolyte imbalance from osmotic diuresis. Fluid replacement in DKA management is complicated in anuric DKD patients on HD due to the risk of fluid overload. Significant hyperkalemia and volume overload in anuric patients with DKA warrant early assessment for urgent hemodialysis.

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Abstract ID: 524

Safety and efficacy of the use of sodium-glucose co-transporter inhibitors (SGLT2i) in kidney transplant recipients at the Royal London Hospital

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Background: Kidney transplant recipients were excluded from trials of SGLT2i due to safety concerns. We have retrospectively reviewed the use of SGLT2i post-kidney transplant at our centre.

Method: 28 kidney transplant recipients (76% male) have been commenced on SGLT2i for either type 2 diabetes mellitus (T2DM) or post-transplant diabetes mellitus. 25 patients had 6-month follow-up and 16 had 1-year follow-up. The median time for SGLT2i initiation post-transplant was six years. On average patients were on two other antidiabetic agents, and 13 were on insulin. 48% were prescribed dapagliflozin, 32% canagliflozin and 20% empagliflozin.

Results: Median [IQR] change in weight (kg) at six months was -1 [-4.5 to 3.1] kg, p = 0.47, and -2.5 [-8.4 to 0] kg, p = 0.05 at one year. Median change in HbA_{1c} (mmol/mol) was -3.5 [-19.75 to 2.75], p = 0.1 at six months and -1.5 [-29.5 to 8.75], p = 0.4 at one year. The changes in body mass index, creatinine, eGFR, alanine transaminases, cholesterol, random glucose and urine protein creatinine ratio were not statistically significant.

No episodes of death-censored graft loss occurred. There were three instances of urinary tract infections at six months and a further three episodes at one year. One patient (empagliflozin) developed diabetic ketoacidosis within the first six months and another episode at 12 months. None had any episodes of genital infections.

Conclusion: In this small retrospective cohort study, SGLT2i therapy was well tolerated in kidney transplant recipients with minimal complications. Modest benefits in weight were observed but there was little improvement in glycaemic control.

Abstract ID: 510

Effect of cardiac autonomic neuropathy on diabetic kidney disease in type 1 diabetes : a 15-year follow-up study

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Introduction: Diabetic kidney disease (DKD) is the leading cause of chronic kidney disease (CKD) and end-stage renal failure (ESRF) worldwide. Cardiac autonomic dysfunction may play a role in the pathogenesis of DKD through a relative increase in sympathetic tone, leading to proteinuria, nocturnal hypertension and declining renal function.

Aims: To examine the relationship between cardiac autonomic neuropathy (CAN) and DKD in patients with type 1 diabetes (T1DM).

Methods: 36 subjects with T1DM underwent assessment for CAN using cardiovascular reflex tests during baseline visits from 2007 to 2010. CAN was defined as > 2/5 abnormal reflex tests. Progressive renal decline was defined as eGFR decline of more than 3 ml/min/1.73 m^2/yr and/or incidental advancement in CKD from baseline stage. The baseline eGFR ranged from 37 to 91 ml/min/1.73m^2/yr in 2007. Association with baseline CAN was assessed by logistic regression adjusted for baseline urine ACR, HbA_{1C} and ACEi/ARB use. Additional sensitivity analysis was performed by adjusting for all variables in the model as well as retinopathy separately.

Results: Among the 36 subjects [18 female, mean age 53.4 (12.8) years and duration of diabetes 34.6 (10.9) years], renal decline occurred in 7(58.3%) of the 12 patients with CAN and 6 (25.0%) in the those without. Baseline CAN was strongly associated with odds of renal decline [adjusted odds ratio 31.6 (95%CI 1.3:796.0); p=0.01]. There was no substantial change after adjusting for retinopathy.

Discussion: In this relatively small but carefully phenotyped study, CAN was a strong independent predictor of the long-term risk of renal function decline in T1DM.