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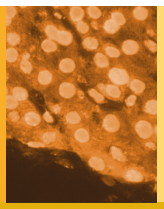
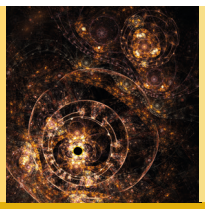

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Nottingham, UK

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Obesity Update 2025

Case Discussions

OC1

Evaluating hypothalamic dysfunction using kisspeptin in obesity-related hypogonadism

Kanyada Koysombat[1,2], Arthur C Yeung[1,2], Patrick McGown[1,2], Agathoklis Efthymiadis[1,2], Sandhi W Nyunt[1,2], Maria Phylactou[1,2], Megan Young[1,2], Bijal Patel[1,2], Elisabeth Daniels[1,2], Aureliane C S Pierret[1,2], Aaran H Patel[1,2], Jovanna Tsoutsouki[1,2], Edouard G Mills[1,2], Anna M Kowalka[1,2], Chioma Izzi-Engbeaya[1,2], Tricia M-M Tan[1,2], Alexander N Comninos[1,2], Ali Abbara[1,2] & Waljit S Dhillo[1,2]
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Background
Male obesity-related secondary hypogonadism (MOSH) affects two-thirds of men with BMI $\geq$40 kg/m^2 and is associated with increased mortality. Animal models suggest decreased hypothalamic function in obesity-related hypogonadism. Existing data in men suggests reduced LH pulse-amplitude but no change in LH pulse-frequency with obesity. Herein, we use kisspeptin to directly examine hypothalamic function in men with obesity, both with and without hypogonadism.
Methods
Men with MOSH (n =21) (BMI $\geq$30 kg/m^2) were identified by fasting total testosterone <10.50nmol/l and free testosterone <0.22nmol/l. We also enrolled eugonadal controls with normal BMI (<30 kg/m^2, n =80) and with obesity (BMI $\geq$30 kg/m^2, n =20). Detailed endocrine profiling included assessment of LH-pulsatility (10-minutely sampling for 8hrs), endocrine responses to intravenous bolus administration of kisspeptin-54 to interrogate hypothalamic function, and to gonadotrophin-releasing hormone to interrogate pituitary function, during three study-visits. Hormone concentrations were compared between groups using the Kruskal Wallis test, and endocrine profiles over time using mixed effects models.
Results
Serum total testosterone (β = -0.47), free testosterone (β = -0.01), and dihydrotestosterone (β = -0.04) were inversely associated with BMI (all P < 0.0001). LH pulse frequency (median, IQR) was increased with obesity (BMI 20–30 kg/m^2: 3.00 [3.00, 4.75] vs >40 kg/m^2: median 5.00 [IQR 4.00, 6.00]) pulses per 8h; P =0.007 but LH pulse-amplitude did not differ. Pituitary response to GnRH did not differ between groups. The early-phase LH response to kisspeptin-54 was blunted in men with MOSH compared to eugonadal men (median area under the curve (AUC) at 60 minutes: MOSH 38.78 [23.85, 78.26] vs lean controls 108.7 [78.56, 190.40]P <0.0001, vs eugonadal men with obesity 124.1 [81.58, 163.90] IU·h/l, P =0.0011). The FSH response to kisspeptin-54 was higher in eugonadal men with obesity than lean controls (median AUC of FSH rise after kisspeptin-54: obese eugonadal 893.80 [596.10, 1104.00] vs lean eugonadal 434.80 [292.70, 692.10] IU·h/l; P =0.003).
Conclusion
Our data revealed increased LH pulse-frequency but not pulse-amplitude in men with obesity. Eugonadal men with obesity had increased response to kisspeptin, but the early phase response to kisspeptin was reduced in men with obesity-related hypogonadism. Our data reveal novel insights into the neuroendocrine interplay that regulates obesity-related hypogonadism.

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OC2

Pre-existing mental health diagnosis and outcomes post-bariatric surgery

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Background
Up to 50% of people with obesity have mental health conditions (mental health in obesity, MHO), and this may affect outcomes post-bariatric surgery. We conducted a retrospective cohort analysis of patients in the Imperial Weight Centre, to assess outcomes and identify where additional intervention may be required.
Methods
Anthropometric, demographic and clinical data were collected from the electronic health records of patients who had primary bariatric surgery between April 2021 and March 2024 (i.e. in the post-COVID era) with up to 2 years follow-up. Patients were excluded if they became pregnant or were diagnosed with cancer during the follow-up period. For patients who had a revisional or second stage procedure during the follow-up period, only data up to the time of the revisional or second stage procedure were included. Weight loss and metabolic outcomes were assessed. Data were analysed using linear regression (for continuous data) or Poisson regression (for categorical data), with models adjusted for age, sex, body mass index (BMI) and type of bariatric surgery.
Results
482 patients were included in the analysis. Some baseline characteristics of people without a mental health condition (no MHO, n = 265) and people with $\geq$1 mental health condition (MHO, n = 217) were similar (no MHO vs MHO: mean age$\pm$SD 45.4$\pm$11.7 vs 43.6$\pm$11.1 years, P = 0.09; mean BMI$\pm$SD 44.6$\pm$7.8 vs 45.8$\pm$8.6 kg/m^2, P = 0.10; female 76.2% vs 88.0%, P <0.001). There were no significant associations between percentage of total weight lost (P = 0.34), <20% weight lost (P = 0.39) or weight regain (P = 0.17). MHO was associated with a decreased likelihood of discontinuation of lipid-lowering medication post-bariatric surgery (RR 0.42 [0.21-0.87], P = 0.019). The likelihood of stopping glucose-lowering medication and blood pressure-lowering medication was similar between groups.
Discussion and Conclusion
Weight loss outcomes are similar in people with and without MHO. However, MHO is associated with a decreased likelihood of discontinuation of lipid-lowering medication post-bariatric surgery. This may be due to concomitant use of medication for MHO, some of which are known to promote dyslipidaemia. Prospective studies are required to determine if additional targeted lifestyle interventions pre- and post-bariatric surgery would be beneficial in people with MHO.

DOI: 10.1530/obabs.1.OC2

OC3

Real-world service evaluation of adult patient outcomes at six months in the roczen digital arm of a novel, digitally-integrated NHS complex obesity service

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Introduction
Inadequate access to obesity treatment is a major public health challenge in the UK. Integrating NICE-assessed digital providers with NHS pathways offers significant potential to increase access, but requires further evidence. We evaluated the 6-month (6m) weight, cardiometabolic, and psychological outcomes of the digital arm of a novel, integrated NHS complex obesity service in the East of England.
Method
The digital service (Roczen) provided specialist weight management support, including psychological assessments and personalised incretin mimetic management. We evaluated patients completing 6m (n =58). The cohort had a mean age of 54.2$\pm$12.2 years and baseline BMI of 47.4$\pm$9.1 kg/m^2, with a significant co-morbidity burden including hypertension (48.3%), osteoarthritis (44.8%), pre-diabetes (27.6%), and Type 2 diabetes (6.9%). 55.2% were prescribed semaglutide, 41.4% tirzepatide, and 3.4% were not on medication. Data at 25 weeks was analysed using mean$\pm$standard deviation, with a paired test of change versus zero applied for p-value calculation where paired data was available.
Results
At 6m, mean weight loss was 14.5$\pm$8.7 kg (11.2$\pm$5.6%, n = 58, P <0.001), with 87.9% achieving $\geq$5% loss, 53.4% achieving $\geq$10%, 22.4% achieving $\geq$15%, and 6.9% achieving $\geq$20%. Cardiometabolic health improved, with significant reductions in waist circumference (13.2$\pm$6.8cm, n = 48, P <0.001), systolic BP (9.9$\pm$12.3mmHg, n = 40, P <0.001), and diastolic BP (6.4$\pm$10.0mmHg, n = 40, P <0.001). Psychological wellbeing also improved, with significant reductions in PHQ-4 depression/anxiety scores (-2.4$\pm$3.1, n = 36, P <0.001) and binge eating scores (BES: -6.92$\pm$9.51, n = 37, P <0.001). No statistically significant differences were observed in outcomes between patient groups from areas of higher versus lower socioeconomic deprivation (Index of Multiple Deprivation 1-5 vs 6-10).
Conclusion
This evaluation provides the first real-world evidence that an integrated NHS-digital model for specialist obesity care delivers significant weight loss alongside substantial cardiometabolic and psychological improvements. Findings support wider adoption of such pathways to increase capacity and access to effective specialist care, demonstrating equitable outcomes between higher and lower deprivation groups.

DOI: 10.1530/obabs.1.OC3

Presented Posters

P1

Comparative efficacy of lifestyle and GLP-1RA-based interventions for visceral adipose tissue reduction: meta-analysis of 36 randomised controlled trials

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Background
Visceral adipose tissue (VAT) drives cardio-renal-hepatic-metabolic (CRHM) risks, necessitating effective reduction strategies. This meta-analysis compares lifestyle and GLP-1 receptor agonist-based (GLP1RAT) interventions for VAT reduction in adults.
Methods
Following PRISMA guidelines, we searched PubMed (January 2010–August 2025) for randomised controlled trials (RCTs) assessing VAT in adults (≥18 years) using bioelectrical impedance analysis, CT, MRI, or DEXA, excluding Type 1 diabetes, gestational diabetes, pregnancy, or organ insufficiency. Percentage VAT change, total fat, BMI, and weight were analysed across diet, exercise, diet plus exercise, and GLP1RAT interventions using random-effects models. Meta-regression explored moderators (age, sex, Type 2 diabetes). Registered in PROSPERO (CRD420251123149).
Results
Thirty-six RCTs (5,769 participants) were included. Diet plus exercise yielded the most significant VAT reduction, followed by GLP1RATs, diet alone, and exercise (Table 1). Very low energy diets (-23.14%) outperformed low-calorie (-14.12%) and low-fat diets (-7.83%). Tirzepatide (-21.84%) and retatrutide (-27.70%) led GLP1RATs; high-dose semaglutide (> 1.0 mg) enhanced VAT reduction beyond weight loss. Weight loss correlated with VAT reduction (r =0.72–0.90). Outcomes varied by age, Type 2 diabetes, and adiposity. CT and MRI detected larger reductions than BIA.

Table 1. Pooled % VAT Reductions by Intervention Category
Intervention | % VAT Change | 95% CI ——————— | ——— | ——— Diet + Exercise | -18.19 | [-27.26, -9.12] GLP1RAT | -14.23 | [-18.80, -9.66] Diet | -10.64 | [-15.21, -6.07] Exercise | -0.61 | [-5.45, 4.23]

Conclusion
Combined diet-exercise, very low energy diets, and GLP1RATs (tirzepatide, retatrutide, high-dose semaglutide) effectively reduce VAT, mitigating CRHM risks, guiding endocrinology practice.
Keywords
Visceral adipose tissue, GLP-1 receptor agonists, diet, exercise, meta-analysis, randomised controlled trials, obesity, Type 2 diabetes

DOI: 10.1530/obabs.1.P1

P2

Navigating the challenges of medical weight management in turner syndrome: a case vignette

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Introduction
Turner Syndrome (TS) is linked to obesity, metabolic dysfunction associated steatotic liver disease (MASLD), hypertension, type 2 diabetes, cardiovascular disease, and psychiatric comorbidities, complicating care. Although no large trials have assessed GLP-1 receptor agonists (RAs) specifically in TS, evidence from obesity and MASLD populations suggests they may enhance satiety, reduce emotional eating, and support sustained weight loss—leading to improved cardiometabolic health. While off-label, GLP-1 RAs represent a promising therapeutic option for TS patients with metabolic dysfunction, further research is needed to clarify potential risks, duration of therapy, and strategies for maintaining metabolic benefits after discontinuation.
Case
A 31-year-old woman with Turner syndrome (TS) and longstanding obesity (BMI 54 kg/m^2) was reviewed in the specialist weight management clinic. Her complex comorbidities included MASLD, congenital sensorineural hearing loss, glaucoma, emotional eating disorder, and obsessive-compulsive disorder. Multiple lifestyle interventions had previously proven unsustainable, and she elected to self-fund GLP-1 receptor agonist therapy with semaglutide, titrated to 2.4 mg weekly. Treatment resulted in a dramatic reduction in BMI from 54 to 18.9 over approximately 8 months, corresponding to an 86 kg weight loss. Liver function improved, with ALT falling from 248 to 142 IU/l and ALP from 175 to 98 IU/l, while lipid profile also improved with total cholesterol decreasing from 6.8 to 5.9 mmol/l. Ultrasound confirmed fatty liver changes. Psychologically, she reported a marked reduction in intrusive food-related thoughts and cravings, although a persistent tendency toward emotional eating remained a concern.
Conclusion
In this case, GLP-1 RA demonstrated remarkable efficacy in a patient with TS, obesity, and multiple cardiometabolic comorbidities. The complexity of such cases underscores the importance of management within a specialist, multi-disciplinary service that offers integrated care pathways to optimise outcomes. Discontinuing GLP-1 therapy after weight loss is challenging due to rebound weight gain driven by physiological counter-regulation and renewed appetite. To minimise relapse, withdrawal should be gradual and supported by strong behavioural/psychological strategies alongside cardiometabolic monitoring. However, the long-term safety and durability of GLP-1 therapy in patients with Turner's syndrome remain insufficiently studied.
DOI: 10.1530/obabs.1.P2

P3

Efficacy and safety of semaglutide 7.2 mg in obesity: STEP UP trial

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Introduction and Objective
This multicentre, double-blind trial (NCT05646706) assessed the efficacy and safety of semaglutide 7.2 mg in adults with obesity (BMI ≥30 kg/m^2) without type 2 diabetes.
Methods
Participants were randomised 5:1:1 to once-weekly s.c. semaglutide 7.2 mg, 2.4 mg or placebo plus lifestyle intervention for 72 weeks, with 9-week off-treatment follow-up. Co-primary endpoints were percentage weight loss (%WL) and proportion reaching ≥5% WL with semaglutide 7.2 mg vs placebo. Confirmatory endpoints were %WL with 7.2 mg vs 2.4 mg, waist circumference (WC) change and proportion reaching ≥10%, ≥15%, ≥20% and ≥25% WL thresholds vs placebo and ≥20% and ≥25% vs 2.4 mg. Safety was assessed. Results for all endpoints were from baseline to week 72 for the treatment policy estimand (in-trial observation period).
Results
Participants (7.2 mg [n =1005], 2.4 mg [n =201], placebo [n =201]) had a mean age of 47 years, weight 113 kg, BMI 39.9 kg/m^2, WC 119 cm and 74% were female. Most treatment completers reached the maximum semaglutide dose (7.2 mg, 75.4%; 2.4 mg, 89.3%; placebo, 96.5%) at week 72. Mean %WL was greater with 7.2 mg (18.7%) vs 2.4 mg (15.6%) or placebo (3.9%), with estimated treatment differences (ETDs; 95% confidence interval [CI]) of –3.1% (–4.7, –1.6) for 7.2 mg vs 2.4 mg, and –14.8% (–16.2, –13.4) for 7.2 mg vs placebo (P <0.001 for both). WC was reduced with 7.2 mg vs placebo (P <0.001). Proportion of participants achieving WL thresholds at week 72 for 7.2 mg, 2.4 mg and placebo, respectively, were: 90.7, 89.9 and 36.8% for ≥5%; 82.4, 75.1 and 20.5% for ≥10%; 66.5, 54.5 and 7.6% for ≥15%; 47.7, 33.3 and 2.9% for ≥20%; and 31.2, 15.3 and 0% for ≥25%. Gastrointestinal adverse events (AEs) were reported by 70.8%, 61.2% and 42.8% of participants with 7.2 mg, 2.4 mg and placebo, respectively; 3.3%, 2.0% and none discontinued due to these AEs; serious AEs were reported by 6.8%, 10.9% and 5.5% of participants, respectively.
Conclusion
Semaglutide 7.2 mg was superior to 2.4 mg and placebo for percentage weight loss in adults with obesity, with a similar safety profile to 2.4 mg.
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P4

Evaluating outcomes and retention in a Tier 3 bariatric program: a two-year retrospective analysis (2022–2023)

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Background
Tier 3 bariatric services provide multidisciplinary support for individuals with severe obesity, focusing on medical optimization, behavioral interventions, and preparation for potential bariatric surgery. Evaluating patient outcomes, pathway retention, and service performance is essential to understand program effectiveness and inform future obesity management strategies.
Method
A retrospective analysis was conducted on all patients referred to a Tier 3 bariatric program from January 2022 to December 2023. Data collected included referral numbers, discharge outcomes, multidisciplinary team (MDT) decisions, surgical referrals, active cases, and reasons for discontinuation from the program. Success in completing the pathway was defined as either referral for bariatric surgery or discharge after achieving a weight loss of more than 5% during the program. Patients who dropped out were categorized based on non-attendance, voluntary withdrawal, or ineligibility for surgery. Active cases at the end of the year were also included to evaluate ongoing patient engagement and the overall performance of the service.
Results
A total of 229 patients were referred in 2022 and 304 in 2023. Successful completions were 55 (24.0%) in 2022 and 28 (9.2%) in 2023. Active cases numbered 5 in 2022 and 83 in 2023. When combining completed and active cases, pathway retention improved from 26.2% in 2022 to 36.5% in 2023, demonstrating increased patient engagement. Patients referred for bariatric surgery decreased from 48 in 2022 to 23 in 2023, reflecting changing patient choices and suitability criteria. Common reasons for leaving the program included non-attendance, preference for weight loss injections, pregnancy, smoking, and other medical or personal factors. Diabetes prevalence decreased from 66 patients in 2022 to 29 in 2023, with notable reductions in type 2 diabetes and pre-diabetes cases. Gender distribution remained predominantly female, and obstructive sleep apnoea prevalence declined.
Conclusion
This analysis demonstrates that while surgical referrals declined, the overall engagement and retention of patients within the Tier 3 pathway improved over the two-year period. Active pathway monitoring highlights the importance of supporting patients who are still progressing through the program. Addressing barriers such as non-attendance and treatment preference is essential to optimize service delivery. These findings support continued evaluation of Tier 3 bariatric services to enhance patient outcomes, inform multidisciplinary practice, and contribute to the development of national obesity management strategies.

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P5

Abstract Withdrawn

DOI: 10.1530/obabs.1.P5

P6

"Empowering nurses to address obesity and diabetes in pakistan: insights from a national survey of 1,223 respondents"

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Background
Pakistan ranks third globally in diabetes prevalence, with 33% of the population living with diabetes and equal proportion s pre-diabetes. Obesity, a major risk factor for diabetes and related non-communicable diseases (NCDs), is rising alarmingly. Nurses, the largest healthcare workforce, remain underutilized in obesity and diabetes prevention and management. Notably, Pakistan currently has no structured Nurse Practitioner (NP) or Advanced Nurse Practitioner (ANP) training programs.
Aim
This study aimed to assess the knowledge, readiness, and perceived barriers among graduate nurses in Pakistan to adopting leading roles in diabetes care, with a focus on addressing its complications.
Methods
A national cross-sectional online survey was conducted with **1,223 graduate nurses** from **64 cities** across Pakistan. The questionnaire captured demographic data, professional education, diabetes-related training, clinical experience, continuing professional development (CPD) needs, and perceived barriers. Data were analyzed descriptively with subgroup comparisons by gender, age, and education.
Results
Only **14.4%** of respondents reported having any formal certificate or diploma in diabetes care, while **85.6%** had no structured training related to diabetes or obesity management. Nurses with prior training were approximately **three times more likely** to express confidence in providing lifestyle modification and weight management counselling than those without training. Key barriers included **lack of knowledge or training (3%)**, **lack of awareness (1.4%)**, **poor patient compliance and resistance to lifestyle change**, and **limited institutional support with restricted nurse authority**. Subgroup analyses revealed that **female nurses** more frequently advocated for public awareness campaigns compared to males. **Younger nurses (<30 years)** showed greater interest in structured training, whereas **older nurses (>50 years)** more often cited patient compliance as a barrier. **Post-RN BSN nurses** demonstrated significantly higher readiness for diabetes care training compared to diploma-qualified staff nurses.
Conclusion
Graduate nurses in Pakistan demonstrate clear readiness to contribute to obesity and diabetes care but face substantial gaps in training, institutional recognition, and policy support. Integrating nurse-led education and interventions—such as the author's pioneering **8-week nurse-led diabetes and obesity care program**—has the potential to transform NCDs management in low- and middle-income countries by expanding workforce capacity and targeting obesity as a key modifiable risk factor.

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P7

Effectiveness of injectable incretin therapies on obstructive sleep apnoea outcomes in overweight or obese individuals: a systematic review

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Aims
To assess the effectiveness of glucagon-like peptide-1 receptor agonists (GLP1) and dual GLP-1 and glucose-dependent insulinotropic polypeptide (GLP1/GIP) receptor agonists in overweight or obese patients with obstructive sleep apnoea (OSA).
Methods
Four electronic databases (Embase, Medline, Web of Science and PubMed) were searched for studies between 2000 –2025 using search terms related to GLP1RA, sleep apnoea and obesity. Randomised controlled trials and observational studies, using injectable incretins as an intervention in adults with BMI > 25 with OSA and measuring apnoea hypopnoea index (AHI), were included. Data was extracted from eligible studies and a meta-analysis performed.

Table 1. Results of Meta-Analysis

Paper	No. of participants	Intervention	Comparator	Treatment Effect AHI (95% CI)	Weight %
Blackman et al. 2016	359	Liraglutide	Placebo	-6.10 (-11.00, -1.20)	39.52
Malhotra et al. Trial 1, 2024	234	Tirzepatide	Placebo	-20.00 (-25.80, -14.20)	27.72
Malhotra et al. Trial 2, 2024	235	Tirzepatide + CPAP	Placebo + CPAP	-23.80 (-29.60, -17.90)	28.20
Donnell et al. 2023	30	Liraglutide + CPAP	CPAP only	2.00 (-12.43, 16.43)	4.56
Overall, IV (I2 = 89.8%, P <0.001, z = -9.264)	858			-14.56 (-17.64, -11.48)	100.00

Results
Of the 1099 studies identified (792 screened by title and abstract and 26 by full text); 3 studies with 4 trial arms and 858 participants were included in the analysis. Studies compared Liraglutide or Tirzepatide with placebo, CPAP or both, with study duration of 24 – 52 weeks. Improvement in AHI was reported in 3 trials while one trial reported maximum benefit in CPAP group, followed by combination (CPAP + GLP1RA), and least effect in GLP1RA group. Studies demonstrated an overall improvement in systolic BP and weight loss. Meta-analysis of the included studies showed overall improvement in AHI with incretins compared to control (Treatment effect -14.56 (95% confidence interval (CI), -17.64 to -11.48)).
Conclusions
We observed that treatment with injectable incretin therapies significantly improved sleep apnoea related and metabolic outcomes in people with OSA and overweight or obesity. There is a need for larger randomised studies reporting consistently on sleep apnoea outcomes to establish the benefits of these therapies in people with OSA.

DOI: 10.1530/obabs.1.P7

P8

When the bypass bypasses bone health: secondary hyperparathyroidism post gastric bypass

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Introduction
Obesity is a major global health concern, and bariatric surgery is an established treatment for sustained weight loss and metabolic improvement. Gastric bypass bypasses the duodenum and proximal jejunum—the primary sites of calcium absorption—altering calcium–parathyroid hormone (PTH) metabolism and predisposing to secondary hyperparathyroidism (SHPT). The British Obesity and Metabolic Surgery Society (BOMSS) advises lifelong biochemical monitoring, with vitamin D 2,000–4,000 IU/day to maintain serum 25OHD > 75 nmol/l, plus calcium replacement[1]. Cortical bone, particularly at the forearm, is vulnerable, with SHPT-related loss associated with higher fracture risk[2].
Case Report
We present a 66-year-old woman who underwent laparoscopic gastric bypass in 1998 and was referred with persistently elevated PTH. She had longstanding vitamin D deficiency for many years before her dose of vitamin D_3 was increased to 3,000 IU/day. Although this achieved repletion of Vitamin D, PTH remained elevated at 17.0 pmol/l (reference 1.3–9.3), with normal adjusted calcium (2.38 mmol/l) and stable renal function. Dual-energy X-ray absorptiometry (DEXA) showed osteopenia at the spine (T-score −1.2) and hip (−1.3), and osteoporosis at the distal forearm (−3.3), consistent with SHPT-related cortical bone loss. She was commenced on calcium and a bariatric-specific multivitamin. Repeat DEXA is planned in three years with ongoing biochemical monitoring.
Conclusion
This case shows that SHPT can arise decades after gastric bypass typically affecting cortical bone at the forearm. It underscores the need for lifelong bariatric-specific supplementation and monitoring of calcium, vitamin D, PTH, and bone health, as recommended by BOMSS guidance.
References
1. O'Kane, M., Parretti, H.M., Pinkney, J., Welbourn, R., Hughes, C.A., Mok, J., Walker, N., Thomas, D., Devin, J., Coulman, K.D. and Pinnock, G., 2020. British Obesity and Metabolic Surgery Society Guidelines on perioperative and postoperative biochemical monitoring and micronutrient replacement for patients undergoing bariatric surgery—2020 update. *Obesity Reviews*, *21*(11), p.e13087.
2. Stein, E.M., Carrelli, A., Young, P., Bucovsky, M., Zhang, C., Schrope, B., Bessler, M., Zhou, B., Wang, J., Guo, X.E. and McMahon, D.J., 2013. Bariatric surgery results in cortical bone loss. *The Journal of Clinical Endocrinology & Metabolism*, *98*(2), pp.541-549.

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P9

Emergency presentations relating to use of real/counterfeit incretin-based therapies

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Introduction
In 2024 three patients were admitted to our ICU of whom 2 died with presentations linked to the use of incretin-based therapies for weight loss. In October 2024 we were asked to perform a case review and subsequent audit of all patients with presentations relating to incretin-based therapy use. The initial audit covered a period January 2024 - October 2024. A report was produced and sent to the Chief Medical Officer in Scotland. A safety alert was circulated to all clinicians in our trust in January 2025. A subsequent audit was performed from Nov 2024-Apr 25.
Method
These were retrospective health informatics searches covering Jan-Oct 24, then Nov 2024-Apr 2025 for all patients who attended one of our three EDs in NHS Lanarkshire with any keyword of interest in presenting complaints was conducted. Medication was documented as being counterfeit if had been seen by the authors/there was a description in the notes in keeping with counterfeit medication.
Results
During the first review period 24 patients presented to our 3 Emergency Departments with presentations we deemed related to Incretin therapy use. During the second period there 61 presentations. During both periods the patient group was predominantly female with mean ages of 35.8 years and 37 years respectively. During the first review period there were fewer attendances but a high usage of counterfeit Semaglutide. During the second period, attendances were much higher, counterfeit drug use was rare and the drug being used was predominantly Tirzepatide.
Discussion
Our clinical experience suggests that counterfeit Tirzepatide and newer combination drugs may become more prevalent, particularly following price increases for private Tirzepatide. It is essential that clinicians and the public are made aware of the risks associated with counterfeit medicines and receive appropriate counselling on lifestyle changes to minimise the side effects of prescribed drugs.

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P10

Impact of roczen's digital clinical service on binge eating symptoms in patients with and without dysglycaemia within a novel, digitally-integrated NHS complex obesity service

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Background
Subclinical binge eating (SCBE) is highly prevalent in patients with obesity1. Active Binge Eating Disorder (BED) typically requires specialist psychiatric intervention but SCBE patients may be inappropriately excluded from weight management services whilst lacking a formal BED diagnosis. Evidence suggests dysglycaemia and binge eating exist in a mutually reinforcing cycle2, yet differential treatment responses remain unexplored. This analysis evaluates 6 month (6m) changes in binge eating symptoms in patients with and without dysglycaemia receiving care and incretin mimetics in the digital arm (Roczen) of a digitally-integrated NHS complex obesity service in the East-of-England.
Methods
All patients underwent comprehensive BED assessment at onboarding by a SCOPE-certified clinician, including the Binge Eating Scale (BES) questionnaire. Where required, psychological support is delivered via multidisciplinary team meetings led by a bariatric clinical psychologist, group sessions, and ongoing clinical management. Paired baseline and 6m BES scores were available for 37 patients. To control for medication effects, two patients not receiving incretin mimetics were excluded, creating a medicated analysis cohort ($n = 35$; tirzepatide $n = 12$, semaglutide $n = 23$). Participants were categorised by dysglycaemia status: non-dysglycaemia ($n = 25$) or dysglycaemia ($n = 10$, comprising prediabetes $n = 9$, and Type 2 diabetes $n = 1$). Given the modest sample sizes, analyses emphasised descriptive summaries.
Results
At 6m, the intervention significantly reduced binge eating scores overall (mean change: -6.77 ± 9.64, $n = 35$, $P < 0.001$). Mean baseline BES scores were lower in the non-dysglycaemia vs dysglycaemia group (13.2 and 16.8, respectively). Post-intervention, the dysglycaemia group showed a numerically greater mean BES reduction (-9.5 points, -56.5% reduction, $n = 10$) compared to the non-dysglycaemia group (-5.7 points, -43.2% reduction, $n = 25$).

Conclusion

On average, patients receiving multidisciplinary obesity care and incretin mimetics within an integrated digital NHS service showed significant reductions in binge eating symptoms. This demonstrates a care model that may avoid inappropriate exclusion of patients affected by SCBE. Descriptive findings suggest greater improvements in patients with co-morbid dysglycaemia, though small subgroup sizes preclude definitive conclusions. These preliminary results support the potential for integrated digital services utilising incretin mimetics to address interconnected metabolic and eating behaviour challenges in NHS settings.

Conflicts of interest

AB, DP, JK, SS, BM are on the medical advisory board and are shareholders in Reset Health. LF and TC are employed at Reset Health. CA is employed at Roczen Ltd.

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