CKM Guidance

Cardiovascular-Kidney-Metabolic Disease

Preventing Adverse Outcomes in Cardiovascular Kidney Metabolic Conditions

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Instructions:

The guidance is separated into the multiple sections.

Clicking on the yellow highlighted text will take you to the relevant section of the guidance on the guidance web site.

Clicking on a pink highlighted abbreviation will take you to the relevant abbreviation within the abbreviations section of this document.

Clicking on a blue link will open relevant external guidance in a new window for more detailed information.

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Definition of overweight, obesity and excess adiposity

Introduction

The Aotearoa New Zealand CKM Guidance Group has identified an urgent need for new, detailed national guidance on obesity and weight management. This section provides interim guidance until that new national guidance is available.

Definition of overweight, obesity and excess adiposity

- Definitions of overweight and obesity were traditionally defined by BMI or waist circumference (WC) by sex and by ethnicity

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- Although BMI is an effective screening tool, there is now a new international consensus definition of obesity due to the limitations of BMI identifying excess adiposity at the individual level when the BMI is < 40 kg/m^2. The new international definition of excess adiposity and obesity is:
    - BMI > 40 kg/m^2 OR
    - BMI > ethnicity-specific threshold AND ≥ 1 anthropometric criteria OR
        - > 35 kg/m^2 in Pacific Peoples
        - > 32 kg/m^2 in Māori
        - > 30 kg/m^2 in Europeans
        - > 25 kg/m^2 in Indo-Asian Peoples
        - NB: Threshold is based on predominant ethnicity
    - ≥ 2 anthropometric measures regardless of BMI
    - Anthropometric features of increased risk are:
        - Waist:height ratio > 0.5
            - Likely most pragmatic as easily performed and not ethnicity- or sex-specific
        - Waist:hip ratio > 0.86 in women and > 1 in men
        - Waist circumference:
            - Non Indo-Asian ethnicity > 88 cm in women; >102 cm in men
            - Indo-Asian ethnicity > 80 cm in women; > 90 cm in men
        - Body fat percentage by DEXA or bioimpedance > 30% for men and > 42% for women

- Excess adiposity is now also defined as either being preclinical or clinical obesity, to identify those greatest at risk and to enable targeted and prioritised interventions.
    - Preclinical obesity is defined as excess adiposity with preserved function of other tissues and organs.
        - The term healthy obesity should no longer be used given the high lifelong risk of developing clinical obesity
    - Clinical obesity is defined as excess adiposity impacting the function of tissues, organs and the entire individual.
        - Impacted function may be due to CKM and/or non-CKM conditions

- CKM conditions include:
    - Cardiovascular disease
    - Chronic kidney disease
    - Elevated blood pressure and hypertension
    - Type 2 diabetes
    - Dyslipidaemia
    - Gout
    - Metabolic dysfunction-associated steatotic liver disease
- Non CKM conditions include:
    - Joint pain and osteoarthritis
    - Reduced age-adjusted mobility
    - Lymphoedema
    - Idiopathic intracranial hypertension (or raised intracranial pressure without space-occupying brain lesion)
    - Obstructive sleep apnoea

Overview of interventions for weight loss

Overview of interventions for weight loss

- An evidence-based, personalised weight loss plan is strongly recommended for all people with clinical obesity.
    - Conversations about weight loss MUST be conducted with a positive, culturally safe and non-judgmental approach.
    - The 5A's framework of Ask, Advise, Assess, Agree, Arrange may be helpful
    - The focus should be on weight loss for health reasons with medical targets rather than societal targets for weight loss or a specific ‘ideal weight’.
        - 5% total body weight loss significantly improves the majority of metabolic parameters including glucose levels, BP, and lipid profile. This may allow for a reduction in medications, but typically, greater weight loss is required for remission of CKM conditions.

        - At least 10-15% total body weight loss is typically required to achieve remission of:
            - Type 2 diabetes
            - OSA
            - Hypertension
        - At least 15-20% reduction in total body weight loss is typically required to achieve remission of:
            - Metabolic dysfunction-associated steatotic liver disease
            - Heart failure with preserved ejection fraction

- Ongoing care is essential because sustained weight loss can be difficult, given that obesity is typically a lifelong remitting and relapsing disease. Twin studies have shown that genetics account for 50 -70% of the variation in body weight and body weight is vigorously defended by increased appetite and reduced mitochondrial energy expenditure through no fault of the person. Ongoing supportive care includes:
    - Whānau-inclusive strategies, which are likely more effective over the longer term and benefit the whole whānau.
    - Dietitian-led nutrition plan with a health coach supporting the patient to implement the plan under dietitian guidance.
    - Where dietitian care is unavailable, ensure basic screening for the frequency of sugary drinks, alcohol, takeaway foods, processed snacks, and sweets, and the ability/motivation to shift to a routine of home-prepared nutritionally balanced meals.
    - Psychology input if any concerns of disordered eating or depression.
    - Screen for household food insecurity, assess knowledge on how to achieve a healthy, balanced diet on a budget and utilise social workers, kaiāwhina or health navigators input.
        - Screen for household food security with these 2 questions using the scale ‘often true’ or ‘sometimes true’ (vs. ‘never true’). Often true should be referred to a social worker +/- kaiāwhina for support
        - Within the past 12 months we worried whether our food would run out before we got money to buy more
        - Within the past 12 months the food we bought just didn’t last and we didn’t have money to get more
    - Refer to local weight loss programmes if evidence-based and available.

- Healthy lifestyle interventions alone are often sufficient, but additional strategies for weight loss should be considered for all with preclinical or clinical obesity as appropriate, particularly people with CKM conditions who are overweight. These strategies include:

- Specific nutritional strategies for weight loss
- Pharmacotherapy for weight loss
- Bariatric surgery

Nutritional strategies for weight loss

Nutritional strategies for weight loss

- There is currently no conclusive evidence that any specific nutrition strategy is superior to any other for long-term weight management.
- Pragmatically, the best nutrition strategy for weight loss is the one that works and people can maintain, is nutritionally adequate, reduces the risk of as many obesity-related conditions as possible and is sustainable.
- In general long-term nutrition needs to optimise fibre, low saturated fat, and include wholegrains, alongside fruit and vegetables.
- Current evidence suggests the following strategies are effective in achieving long-term weight loss and reductions in CKM conditions
  - Intensive very-low-energy-diet programs with ongoing support to achieve a healthy, balanced diet long term e.g. DiRECT style intervention
    - The DiRECT Trial intervention was a very low energy total meal replacement for 12-20 weeks followed by step wise food reintroduction with ongoing support to sustain a healthy, balanced diet.
  - Mediterranean diet
  - Dietary approach to stop hypertension (DASH)
  - Plant-based diets
  - High fibre low fat diets
  - Low carbohydrate diets → carbohydrates 20 - 45% of total energy expenditure (~130g carbohydrates per day).
    - Not recommended if on empagliflozin due to risk of ketoacidosis
- Other strategies that appear safe and effective to achieve weight loss in the short-term and awaiting long term data include:
  - Very low carbohydrate or ketogenic diets → carbohydrates < 20% of total energy expenditure (~ 50g of carbohydrates per day)

        - Requires monitoring of CV risk long term due to increased dyslipidaemia
        - Not recommended if on empagliflozin due to risk of ketoacidosis
    - Intermittent fasting

- Dietary approach should be an informed shared decision determined by health risk biomarkers, medications and related conditions (e.g. presence of CKD or dyslipidaemia), personal preference, cultural acceptability, tolerability, affordability and nutritional adequacy.
- Particular care needs to be taken to ensure adequate nutrition in children, pregnancy, breastfeeding and the elderly or anyone at risk of sarcopenia
    - Remember being mildly overweight is protective in the elderly
    - Adequate protein intake and physical activity is important in maintaining muscle mass
    - Utilise dietitian resources for these high-risk groups

Pharmacotherapy for weight loss

Pharmacotherapy for weight loss

- Pharmacotherapy should be considered if weight loss targets are not reached by nutritional strategies alone AND either BMI > 30 kg/m^2 or BMI > 27 kg/m^2 with at least one obesity-related condition.
- Unfortunately all pharmacotherapy registered for weight loss is not funded in Aotearoa New Zealand but options include:
    - Phentermine (Duromine)
        - Least expensive agent at ~ $80/month
        - Sympathetic side effects may limit use particularly if CV disease
            - Do not use phentermine if CV disease, arrhythmias, untreated hypertension or thyrotoxicosis, substance abuse, pregnancy, breastfeeding or children
        - Phentermine 15 mg daily appears best dose as similar efficacy with less adverse effects than higher doses.
        - Common misconceptions are that phentermine is addictive and can only be used for up to 3 months, which are untrue.
    - Orlistat (Xenical)
        - Cost is ~ $120/month but not used commonly due to GI adverse effects

        - Best to use orlistat with a low fat diet with doses of 120 mg with main meals

    - Buproprion and naltrexone (Contrave)
        - Cost of Contrave ~ $250/month
        - Contrave tablets contain 8 mg of naltrexone and 90 mg of bupropion and titrate based on adverse effects
            - Typically start at 1 tablet per day and increase by 1 tablet per week up to 2 tablets twice daily or maximal tolerated dose.
            - Slow down dose increases adverse effects e.g. nausea, dizziness, headache
            - GI adverse effects typically dissipate within 2-3 week
        - Can be useful to help low mood, or if smoking cessation desired
        - Do not use in pregnancy, breastfeeding, children, uncontrolled hypertension, history of seizures, bipolar disorder, MAOI use or withdrawal of alcohol or benzodiazepines etc.

    - GLP1 receptor agonists (GLP1Ra)
        - Likely the most effective pharmacological treatment for weight loss.
        - All current GLP1Ra in NZ are subcutaneous injections.
        - Utilise funded liraglutide (Victoza) or dulaglutide (Trulicity) if the person has type 2 diabetes as GLP1Ra are expensive to self-fund.
        - Liraglutide (Saxenda) was the principal GLP1Ra used for weight loss in NZ until the arrival of newer GLP1Ra, but is still available:
            - Cost is ~ $480 - $500/month
            - Start at 0.6 mg daily and increase dose by 0.6 mg per day each week to 3 mg daily or maximal tolerated dose
            - Titration can be slowed if adverse effects occur
            - Need to prescribe with BD fine 4 mm or 5 mm needles
        - Semaglutide (Wegovy) and tirzepatide (Mounjaro) are now available and are weekly injections that typically lead to greater weight loss and CV protection than liraglutide. Semaglutide is also registered for CV risk reduction alone in those with a BMI $\geq$ 27 kg/m^2
            - Cost of semaglutide is ~ $370 - $500/month (often variation between pharmacies)

        - Start semaglutide at 0.25 mg weekly and increase every 4 weeks to 0.5mg weekly, 1 mg weekly, 1.7 mg weekly and 2.4 mg weekly or maximal tolerated dose
        - Titration can be slowed if adverse effects occur
    - Cost of tirzepatide is ~ $430 - $900/month (cost is dose-dependent and often variation between pharmacies)
        - Start tirzepatide at 2.5 mg weekly and increase every 4 weeks to 5 mg weekly, 7.5 mg weekly, 10 mg weekly, 12.5 mg weekly, and 15 mg weekly or maximal tolerated dose
        - Titration can be slowed if adverse effects occur
- Ensuring adequate protein and nutrient intake is important if people are prescribed GLP1Ra. People with obesity are already at risk of malnutrition if they consume an energy-dense, nutrient-poor diet. GLP1Ra may worsen this by reducing appetite, which can lead to nutrient deficiencies, loss of lean body mass and bone density.
    - Consider Dietitian referral for advice on nutritionally adequate intake to avoid deficiencies
    - Consider screening and monitoring of muscle wasting and nutritional deficiencies including protein, vitamins A, C, D, E, B12, folate, thiamine, iron, calcium, magnesium and zinc
- Discuss exercise and strength training as important to maintain muscle and bone mass
- Provide advice with all GLP1Ra on how to reduce adverse effects:
    - Ensure adequate hydration
    - To stop eating when feeling full
    - Eat smaller meals and avoid alcohol, fatty and spicy foods
    - Slow down dose increases if GI adverse effects occur
    - GI adverse effects typically dissipate within 2-3 weeks
    - Doses of sulfonylureas and insulin may need to be reduced to avoid hypoglycaemia
    - Consider halving sulfonylureas and reducing total daily doses of insulin by approximately 20%, particularly if baseline HbA1c < 64 mmol/mol
    - Do not use in pregnancy, breastfeeding , children < 10 years of age, significant GI disease or medullary thyroid cancer
    - GLP1Ra should be stopped once eGFR < 15 mL/min

- The traditional approach with pharmacotherapy is to treat for 3 months to determine if ‘responder’, which is defined as ≥ 5% total body weight loss in this time period.
    - If ‘non-responder’ → consider different pharmacotherapy for weight loss
    - If ‘responder’ → aim to continue treatment until weight loss plateaus. Can then consider:
        - Dose reduction or cessation, but advise weight regain is common and refer to dietitian for review of nutrition plan
        - Continuing current dose to ensure weight stability
            - All pharmacotherapy above safe for at least 3 years
        - Switching to or adding in alternative pharmacotherapy agent
            - Do not use phentermine and bupropion in combination
- Some medications have been used ‘off-label’ for weight loss, particular if cost is an issue:
    - Metformin typically only leads to a maximum average of 2 kg weight loss.
    - Topiramate may be useful if history of migraines or epilepsy
        - Start at 25 – 50 mg daily and can increase to 100 mg daily
        - Often used in combination with phentermine internationally
        - Beware of teratogenic effects
    - Bupropion ± naltrexone may be prescribed individually but the efficacy and safety for weight loss in not known
    - Empagliflozin is not recommended for weight loss unless treating underlying type 2 diabetes, renal disease or heart failure.

Bariatric surgery for weight loss

Bariatric surgery

- Bariatric surgery continues to be an important treatment for weight loss, particularly if targets are not reached with nutritional strategies and pharmacotherapy.
- Access to funded bariatric surgery is limited and varies regionally. Consider if BMI > 40 kg/m^2 or BMI > 35 kg/m^2 with obesity-related conditions:
    - Roux en Y bypass and sleeve gastrectomy appear most effective procedures for weight loss
    - Appropriate patient selection continues to be critical and early referral to a dietitian strongly recommended

        - NB: Upper BMI limit of < 55 - 65 kg/m^2 for bariatric surgery varies across Aotearoa → check with local centre.

- Post-operative care is important after bariatric surgery to reduce complications and to ensure adequate nutrition.
    - Many people are now travelling overseas for bariatric surgery and have no post-operative plan. Please click here if post-operative advice required.

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Abbreviations:

CKM
Cardiovascular-Kidney-Metabolic

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