Psychotropics & Weight Gain

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Overview

- Obesity epidemic
- Obesity and mental illness
- Meds and weight gain (antidepressants)
- Management strategies for medication induced weight gain
Obesity Epidemic

- Percent of adults age 20 years and over who are obese: 35.1% (2011-2012)
- Percent of adults age 20 years and over who are overweight, including obesity: 69.0% (2011-2012)

Source: Health, United States, 2013
Health risks of obesity

- Osteoarthritis
- Sleep apnoea (increased risk with BMI of 30 or greater)
- Gallbladder disease, Liver disease
- Polycystic ovarian disease
- Cancer (oesophageal, colon, endometrial, kidney, breast)
- Coronary Heart Disease (CHD), Cardiovascular disease (CVD), Hypertension, Stroke, Hyperlipidemia
- Type 2 Diabetes Mellitus (T2DM)
- Metabolic syndrome
Psychological risks: Obesity

- Altered body image
- Depression
- Restricted lifestyle and quality of life
- Significant factor in non compliance with psychotropic medication thus increasing the risk of relapse
Assessment

3 main measures:
1. Body Mass Index (BMI),
2. Waist circumference
3. Waist to hip ratio (WHR).
BMI

- Weight (kilograms) ÷ Height (metres) squared or
- Weight (pounds) ÷ Height (inches) squared × 704.5
- Use online calculator
- More reliable than scales because weight varies with height
## Classification BMI (WHO, 2000)

<table>
<thead>
<tr>
<th>BMI</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 18.5</td>
<td>Underweight</td>
</tr>
<tr>
<td>18.5 – 24.9</td>
<td>Healthy</td>
</tr>
<tr>
<td>25.0 – 29.9</td>
<td>Overweight</td>
</tr>
<tr>
<td>30 – 39.9</td>
<td>Obese</td>
</tr>
<tr>
<td>≥ 40.0</td>
<td>Morbidly obese</td>
</tr>
</tbody>
</table>
Waist circumference

1. Loosen and lift clothing away from around waist
2. Position the tape mid-way between the top of hip bone and the bottom of the rib cage
3. When taking the measurement, the abdomen should be relaxed and breathing out
4. Record the measurement
Patients with severe mental illnesses (e.g., schizophrenia, bipolar disorder) have a greater risk of weight gain and obesity than the general population.

In fact, this risk may approach two-fold\(^1,3\); up to 60% of patients with severe mental illnesses may be obese.
<table>
<thead>
<tr>
<th>Antidepressants</th>
<th>Relative incidence</th>
<th>Antipsychotics</th>
<th>Relative incidence</th>
<th>Mood stabilizers</th>
<th>Relative incidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amitriptyline</td>
<td>++++</td>
<td>Aripiprazole</td>
<td>+</td>
<td>Carbamazepine</td>
<td>+</td>
</tr>
<tr>
<td>Bupropion</td>
<td>+/−</td>
<td>Asenapine</td>
<td>+</td>
<td>Lamotrigine</td>
<td>+</td>
</tr>
<tr>
<td>Citalopram</td>
<td>+</td>
<td>Chlorpromazine</td>
<td>++</td>
<td>Lithium</td>
<td>++</td>
</tr>
<tr>
<td>Duloxetine</td>
<td>+</td>
<td>Clozapine</td>
<td>++++</td>
<td>Valproate</td>
<td>++</td>
</tr>
<tr>
<td>Escitalopram</td>
<td>+</td>
<td>Haloperidol</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluoxetine</td>
<td>+</td>
<td>Olanzapine</td>
<td>++++</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mirtazapine</td>
<td>++++</td>
<td>Risperidone</td>
<td>++</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paroxetine</td>
<td>++</td>
<td>Quetiapine</td>
<td>++</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sertraline</td>
<td>+</td>
<td>Ziprasidone</td>
<td>+</td>
<td></td>
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<tr>
<td>Venlafaxine</td>
<td>+</td>
<td></td>
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</tr>
</tbody>
</table>

++ very low risk (or even weight loss), + low risk, ++ moderate risk, +++ high risk
Antidepressants appear to cause weight gain through their interactions at several receptor sites:

- Histamine-1
- Serotonin-2C
- Muscarinic cholinergic
Antidepressants

- Mirtazapine- antagonism of histamine-1 and serotonin-2C receptors

- Paroxetine is the agent most commonly associated with weight gain of all of the SSRIs (> affinity for muscarinic cholinergic receptors)

- In contrast, bupropion exhibits extremely low binding at these receptors, and it is not associated with weight gain.
# Medications Used to Prevent Weight Gain

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dose Range</th>
<th>Side Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amantadine</td>
<td>100-300mg/d</td>
<td>Anxiety, Insomnia</td>
</tr>
<tr>
<td>Metformin</td>
<td>750-2550mg/d</td>
<td>GI upset, Lactic acidosis, loose stools</td>
</tr>
<tr>
<td>Nizatidine</td>
<td>300-600mg/d</td>
<td>Constipation, dizziness, headache, dry mouth</td>
</tr>
<tr>
<td>Topiramate</td>
<td>100-250mg/d</td>
<td>Sedation, memory problems +++</td>
</tr>
</tbody>
</table>
Focus on Prevention

- “subsequent weight loss is very difficult to achieve and existing interventions to promote weight loss are often ineffective” (Marder, et al., 2004, p. 1336).

- Take full health history – if patient has a family history of obesity, diabetes or has a BMI of 25 or higher, consider weight gain profile of different medication (Marder, et al., 2004)
Monitor & chart BMI & waist circumference of every patient on psychotropic medication. For those on medication’s known to be associated with weight gain, weigh, measure and chart at each outpatient visit (or admission) for 6 months, or after any medication change. Encourage the patient to monitor and chart their own measurement and weight.
Unless a patient is underweight (BMI ≤ 18.5), a weight gain of one BMI unit indicates the need for an intervention. If the waist circumference is ≥ 102 cm (men) or ≥ 88 cm (women) an intervention is needed (Marder et al., 2004).

Aim to maintain therapeutic effects while minimizing weight gain and consider substituting a suitable antipsychotic with a low weight gain profile.
Reducing weight gain

- Multidisciplinary approach
- Mortality/morbidity can be reduced by loss of 5% to 10% of body weight.
- Address issues underlying weight gain for example, if weight gain is related to medication reduce the dose to minimise weight gain while maintaining therapeutic effect or substitute with another psychotropic drug.
Reducing weight gain

- Educate patient/carers on lifestyle changes.
- low cost or no cost programs
- Caloric reduction diet of 5 or more servings of fresh food and vegetables daily and reduce saturated and trans fatty acid intake ≤ of total energy intake (National Heart Foundation of Australia, 2007).
- Regular exercise by gradually building up tolerance to at least 30 minutes of moderate exercise for most days of the week (National Heart Foundation of Australia, 2007).
- Reduction alcohol intake
- Self monitoring, stress management, cognitive restructuring
- Bolster self-efficacy, emotional, moral support
Q & A