Weight management in patients with severe mental illness

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Evolution of human body size
Family portrait
Outline

- Obesity in patients with SMI
- Weight management strategies
  - Clinical monitoring
  - Choice of psychotropic medication
  - Lifestyle intervention
  - Pharmacological intervention
  - Coordination of physical and mental health care
Obesity in patients with SMI

- Obesity: nearly twice as in the general population
- Obesity: increased risk for metabolic syndrome
- Metabolic syndrome (3 or more criteria)
  - Waist circumference (men > 40 inches, women > 35 inches)
  - Triglycerides (≥ 150 mg/dL)
  - HDL (men < 40 mg/dL, women < 50 mg/dL)
  - Blood pressure (≥ 130/85 or drug treatment)
  - Fasting glucose (≥ 100 mg/dL or drug treatment)
Metabolic syndrome in schizophrenia

- The percentage of people with metabolic syndrome
  - Schizophrenia: 43%
  - General population: 24%

- The percentage of people with diabetes
  - Schizophrenia: ~14%
  - General population: 7%

- Metabolic syndrome: a major risk factor for cardiovascular disease and death
Mortality in SMI: compared with the general population

- Mortality rate: 2-4 times higher
- Life expectancy: 20-30% shorter
- Death: up to 3 decades earlier
- Cardiovascular disease: the major cause
- Cardiovascular death: 6-7 times higher
Obesity: definition

- **Weight**
- **Body mass index (BMI):** \( \text{weight(kg)/height(m}^2) \)
  - 25-30: overweight
  - \( \geq 30 \): obese
- **Waist/hip ratio**
- **Waist circumference**
  - Better than BMI or waist/hip ratio in predicting insulin resistance in clozapine treated patients with schizophrenia\(^1\)

\(^1\) *J of Psychiatric Practice*, 2009
Obesity: location matters

Subcutaneous Fat
Abdominal Muscle Layer
Intra-abdominal Fat
Metabolic obese but normal weight (MONW)

- Obesity is NOT necessary for the development of
  - Diabetes
  - High cholesterols
  - Hypertension
  - Heart attack
- MONW identified in patients with schizophrenia\(^1\)

\(^1\)Schizophrenia Research, 2010
Increased risk for obesity in SMI: why?

- Genetic vulnerability
- Unhealthy lifestyle
  - Unhealthy food
  - Lack of exercise
- Psychotropic medications
  - Most antidepressants, mood stabilizers and antipsychotics
  - Some are worse than the others
- Barriers to medical care
Weight gain: clinical questions

- Not everyone gains weight
- Difficult to predict who will gain weight
- Weight gain starts early
- Weight gain levels off in 3 months to 1 year (?)
- Weight gain: difficult to lose
- Weight gain: not necessary for the development of other metabolic problems
- Effects on self-esteem, compliance
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## Weight management: clinical monitoring

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Weight management: choice of antipsychotic medication

95% CIs for weight change after 10 weeks on standard drug doses, estimated from a Random Effects Model

Weight management: choice of antipsychotic medication

- Metabolically neutral choices
  - Ziprasidone: under-utilization, under-dosing because of concern for QTc prolongation
  - Aripiprazole: monthly IM injection form available soon
  - Lurasidone: more long-term data needed

- Dosing
  - Acute stabilization versus maintenance
  - Smoking versus non-smoking

- Inappropriate use of antipsychotic agents: “universal glue”
Weight management: lifestyle intervention

- **Food intervention**
  - Choose healthy diet
  - Minimize fast food
  - Downsize the meal portion
  - Monitor food intake
Healthy diet

- Emphasizes fruits, vegetables, whole grains, and fat-free or low-fat milk and milk products
- Includes lean meats, poultry, fish, beans, eggs, and nuts
- Minimizes saturated fat, trans fat, cholesterol, salt and sugar

Fat
- Bad fat
  - Saturated fat: whole milk, cheese, ice cream…
  - Trans fat: deep fried fast food – French fries, fried chicken…
- Good fat
  - Polyunsaturated fat: fish, fish oil…
  - Monounsaturated fat: olive oil, seeds and most nuts…
Fast food

“A large fast food meal (double cheeseburger, French fries, soft drink, desert) could contain 2,200 calories, which… would require a full marathon to burn off” (Lancet, 2002)
Portion size matters
### My Food Diary

Please, write down everything you had during the day. Please underline the day you are writing about!

**Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday**

<table>
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<th>Time of Day</th>
<th>Meals/ Snacks</th>
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<td></td>
</tr>
<tr>
<td><strong>Nibbles:</strong></td>
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</tbody>
</table>
Weight management: lifestyle intervention

- Exercise intervention
  - Walking (moderate to vigorous)
    - 20-30 minutes per day (stop watch)
    - 10,000 steps per day (pedometer)
  - Limit TV time (no more than one hour per day)
  - Physical activity log
Pedometer

- The use of pedometer associated with
  - Increased activity (2,000 steps or 1 mile/day)
  - Clinically relevant reductions in weight and blood pressure

- Strategies
  - Setting a step goal
  - The use of a step diary

(JAMA, 2007)
Behavioral change in patients with SMI: special considerations

- Cognitive deficits (memory, executive function)
  - Highly structured presentation format
  - Frequent repetition of material
  - A/V presentation
  - In vivo practice
    - On-site nutrition education in a grocery store
    - Group walk exercise
Behavioral change in patients with SMI: special considerations

- Behavioral modification techniques
  - Shaping
    - Reinforce successive steps towards specified goals
  - Token economy
    - Based on principles of operant conditioning and social learning
    - Token: redeemable for consumables
Weight management: lifestyle intervention

- NEJM, 4/25/2013
- An 18-month behavioral weight loss intervention in overweight or obese adults with SMI
- N=291 (58% schizophrenia, 22% bipolar disorder, 12% major depression)
- Randomization: intervention versus control
- At 18 months, between-group difference in weight change – 3.2kg
An “obesogenic” environment
Weight management: pharmacological intervention

- First-episode schizophrenia treated with low-dose clozapine, risperidone, olanzapine or sulpiride.
- Randomized to three groups
  - Metformin alone
  - Lifestyle plus metformin
  - Lifestyle plus placebo
- The lifestyle-plus-metformin treatment was significantly superior to metformin alone and to lifestyle plus placebo for
  - Weight
  - BMI
  - waist circumference reduction.

Integration of physical and mental health care

- Schizophrenia: “split mind”
- The reality of “schizophrenic” care of mind and body
  - Mental health providers: medical issues “not my area”
  - Physical health providers: lack of knowledge about psychotropic agents; fear of “mess around” with schizophrenia patients; time constraint
  - Failure of the metabolic monitoring schedule
- Consequence: medical problems “fall through the cracks” – undiagnosed, untreated
Integration of physical and mental health care

CHL model

- A Primary and Behavioral Health Care Integration (PBHCl) program supported by a SAMHSA grant
- Offers on-site primary care, nurse care management, peer support, and wellness groups to consumers already receiving outpatient behavioral health services

Challenges

- Billing
- Separated medical records
- SUSTAINABILITY
Integration of physical and mental health care

- Health home model
  - Multiple stakeholders=>sustainable
  - Customized to meet the specific needs of low-income patients with chronic medical conditions
  - Major components
    - Comprehensive care management and coordination
    - Comprehensive transitional care
    - Patient and family support
    - Referral to community and support services
    - Use of health information technology to link services
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