ST. VINCENT'S MENTAL HEALTH SERVICE

SVFS05—MAY 2007

Medical Morbidity in People with a Mental Illness

Guidelines for Staff:

OVERVIEW

- people with severe mental illness are at increased risk for a number of medical conditions.
- these are often undetected and untreated, with subsequent elevated morbidity & mortality.
- Routine monitoring of weight, glucose and serum lipids are required.
- optimal medical care, and extra monitoring in high risk individuals, is required.

Obesity

- **BMI (Body Mass Index)**
  = Weight in kg / height in m²
- **BMI >30kg /m² = "obese"**
  (25-29 = "overweight")
- **Related to increased risk for:**
  - diabetes
  - hypertension
  - cardiovascular disease (CVD)
  - arthritis
  - breast cancer
- **Significant social stigma**

Obesity in Mental Illness

- **Rates > general population**
- **Driven by Diet & Lifestyle + Medications**
  - Antipsychotics
    - 10 week data (Alison et al, 1996)
      - Clozapine 4.4kg
      - Olanzapine 4.1kg
      - Risperidone 2.1kg
      - Ziprasidone 0.04kg
      - Aripiprazole –1.0kg over 26 week
    - Ziprasidone essentially weight neutral (Carsson et al, 2002)
    - possibly worse in adolescents (Theisen et al, 2001)
  - Valproate
  - Lithium
- **Significant reason for non-adherence to medication**

Management

- Warn patient & institute diet/exercise regime early
- Monitor weight, BMI, abdominal girth (and triglycerides, fasting glucose, blood pressure)
- Behavioural approach (Wirshing et al, 1999)
  - weight every visit (1-4 weeks)
  - diary of food intake & dietician advice
  - exercise classes
- Medications
  - select antipsychotic or switch to agent with less propensity to weight gain
  - Some potential weight-loss agents available. Refer for medical review.

Hyperlipidaemia

Normal ranges:

- HDL/LDL <3.5
- Total cholesterol/HDL <4.5
- linear relationship between CVD and serum cholesterol (Stamler et al, 1986)
- reducing total cholesterol (TC) and low density lipoprotein (LDL) significantly reduces CVD risk
- use of statins effective (target 3-hydroxy 3-methylglutarylcoenzyme A – HMGCOA reductase involved in cholesterol synthesis)

Hyperlipidaemia & Antipsychotics

- ↑ TG and ↓ high density lipoprotein (HDL) associated with
  - phenothiazines
  - dibenzodiazepines (clozapine, olanzapine, quetiapine) (Meyer, 2003)
- ↑ TG rapid (eg. 12% ↑ LDL after 6 weeks of olanzapine) … and peaks around 1 year (Glick et al, 2001)
- ↑ TG not consistently associated with ↑ weight

Clinical Recommendations

- screening for risk factors (eg. smoking, family history of CVD, bp and weight)
- baseline lipid profile and annually thereafter
- with higher-risk antipsychotics, quarterly fasting TG & TC over first year
- advice about diet, lifestyle
- if persistently high LDL, TG, TC, use statin (Meyer, 2003)

Glucose Intolerance & Diabetes

Normal range 4-7 mmol/L

American Diabetic Association (ADA) Criteria:

Clinical Factors

+ random glucose	≥ 11.1 mmol/l
or fasting glucose	≥ 7 mmol/l
or GTT glucose	≥ 11.1 mmol/l

For glucose intolerance

fasting glucose	>5 mmol/l

Type I diabetes = problem of insulin secretion
Type II diabetes = insulin resistance
(hepatic, skeletal muscle, adispose tissue) (Lebovitz, 2001)

Factors Associated with Type II Diabetes

- genetic predisposition (Lebovitz, 2001)
- central obesity
- excess caloric intake
- high fat ingestion
- ↓ physical activity

PLUS: Medications, by

- ↑ appetite
- altered fat distribution
- sedation - ↓ activity
- interfere with insulin cascade
- ↑ FFA (free fatty acid) release from fatty tissue

Diabetes & Antipsychotics

Clozapine 5-year Study of 101 participants:

(Henderson et al, 2000)

- Prior diabetes exacerbated 36 new cases

Olanzapine

- Case reports of diabetes & DKA (diabetic ketoacidosis)
- Case reports of diabetes resolving once Olanzapine stopped

Risperidone

- A few reports, mostly in people already predisposed

Quetiapine

- possible modest increase in risk (?related to weight gain)

Aripiprazole

- no evidence to suggest any elevated risk

Ziprasidone

- no evidence to suggest increased risk

Screening & Monitoring

(Henderson et al, 2000)

- risk assessment (family history, obesity, etc.)
- baseline fasting glucose (and other bloods)
- advice regarding diet and exercise
- regular fasting glucose every 6 months and more frequently if risk factors, eg.
  - age > 45yrs
  - ethnicity (Indian, African)
  - obese
  - Family history of diabetes
  - prior elevated plasma glucose
  - prior gestational diabetes
- if patient develops diabetes
  - diet & exercise and general measures
  - consider change of antipsychotic to low-risk agent
  - treat & monitor

Hyperprolactinaemia

Normal range 0-20 ng/ml
Pregnant Women 10-300 ng/ml

- notably with typicals and risperidone, amisulpride
- association with sexual dysfunction & menstrual irregularities
- galactorrhoea / breast enlargement
- long term osteoporosis?
- ? ↑ risk of breast cancer

Screening & Monitoring

- Suggest baseline and annual prolactin levels for prolactin-elevating antipsychotics
- If markedly/persistently high - medical/endocrine review; if any side effects of concern consider switch to other antipsychotic.

Cardiac

- Prolonged QTc due to effects on K+ channels delay repolarisation

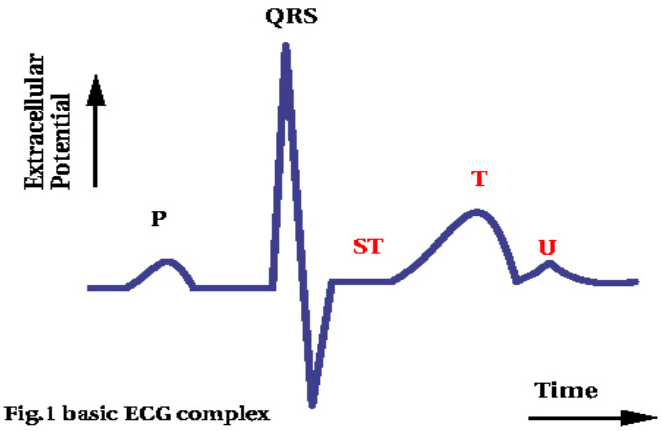

Fig.1 basic ECG complex

QTc and Antipsychotics

- Resting QTc typically: Females < 420 ms Males < 430 ms
- Risk of sudden death (torsades de pointes, ventricular fibrillation) at QTc > 500 ms

Which Antipsychotics Affect Cardiac Conduction?

Thioridazine	35 ms
Haloperidol	5 ms
Ziprasidone	20 ms
Risperidone	
Olanzapine	all < 15 ms
Quetiapine	

Also concern about

- Droperidol
- Pimozide

Screening & Monitoring

- Baseline and at least annual ECG for patients with any pre-existing cardiac problem and for all patients starting Ziprasidone.

Disclaimer

This Fact Sheet has been prepared by Professor David Castle, Chair of Psychiatry, St. Vincent's Mental Health Service and The University of Melbourne; formatted by Malinda Edwards.