Metabolic Health of People Admitted to a Psychiatric Intensive Care Unit in Adelaide, South Australia

To the Editor: People with psychiatric disorders have high rates of comorbid obesity, cardiovascular disease, metabolic syndrome, and diabetes. These disorders are associated with poor quality of life and premature mortality.[1]

Lifestyle factors including poverty, poor diet, and lack of exercise contribute to physical comorbidity. In addition, many psychotropic drugs, including some of the atypical antipsychotics, mood stabilizers, and antidepressants, are associated with weight gain and increased risk of metabolic syndrome.

A recent voluntary screening program for public mental health patients in the United States[2] found high rates of obesity, hypertension, and elevated cholesterol, glucose, and triglycerides. John and colleagues[3] found that 54% of Australians attending community mental health clinics met International Diabetes Federation criteria for metabolic syndrome, compared to rates of 13.4%–30.7% in the general Australian population.[4] However, few data are available concerning the metabolic profiles of people admitted acutely to hospital with severe psychiatric disorders.

We assessed a range of metabolic parameters in patients admitted involuntarily to a 10-bed, closed psychiatric intensive care unit. This service managed the most severely behaviorally disturbed patients from a catchment population of approximately 750,000 people in Adelaide, South Australia.

Method. One hundred nineteen consecutive patients were admitted during the study period. Fourteen patients refused measurement of body mass index (BMI) or venipuncture; data for the remaining 105 patients are included in the analysis. This study conformed to the ethical criteria of the Australian National Health and Medical Research Council (2003).[5]

Results. The patients' mean age was 35.21 years (SD = 10.62), and 67% were male. Men were significantly younger, on average, than the women ($t = 5.15$, $df = 103$, $P < .001$). Thirteen subjects (12%) were Aboriginal. The most common clinical diagnosis (*DSM-IV* criteria) was nonaffective psychosis (67%, n = 70), followed by bipolar disorder (21%, n = 22).

The mean BMI was 27 (SD = 6.14), with 4 subjects (3.8%) being underweight (BMI < 20), 31 (29.5%) overweight (BMI = 25–30), and 32 (30.5%) obese (BMI > 30). The mean BMI did not significantly differ between men (mean = 26.9, SD = 6.25) and women (mean = 27.3, SD = 6.0). Standard laboratory criteria (Institute of Medical and Veterinary Science, Adelaide, South Australia[6]) were utilized to interpret the blood results. The mean fasting blood glucose level was 4.9 mg/dL, and 25 subjects (23.8%) had an elevated fasting glucose level (> 5.5 mg/dL). The mean fasting cholesterol level was 4.43 mmol/L (SD = 1.34), with 16 patients (15.2%) having borderline high cholesterol (5.18–6.18 mmol/L) and a further 9 (8.6%) classified as having high cholesterol (> 6.19 mmol/L). The mean triglyceride level for the sample was 1.85 (SD = 1.20), with 43 (43.9%) having elevated triglycerides (≥ 1.6 mmol/L). The mean low-density lipoprotein cholesterol (LDL) level was 2.56 (SD = 0.91) mmol/L, and 17 patients (16.1%) had elevated LDL ≥ 2.6 mmol/L. The mean high-density lipoprotein cholesterol (HDL) level was 1.19 (SD = 0.32) mmol/L. Men had significantly lower HDL ($t = 2.49$, $df = 96$, $P = .015$). For each unit increase in HDL, BMI decreased by 4.49 ($P = .019$).

There was a mean weight gain of 2.45 kg during hospitalization. The mean length of stay was 11.6 days, so patients gained a mean of 0.22 kg/d. Contributing factors include the lack of opportunity to exercise and a policy of allowing patients to purchase confectionery, chips, and soft drinks. Ninety percent of our sample (n = 95) were treated with olanzapine, clozapine, and/or sodium valproate. The mean weight gain was greater for patients treated with these medications, although these differences did not reach significance. However, other medications with a more favorable metabolic profile are clearly preferable, even in the acute setting.

Our study shows that about 60% of these acutely unwell patients are overweight or obese, almost half have elevated triglycerides, and a quarter have elevated fasting blood glucose and elevated cholesterol. These rates are very similar to rates in the healthy Australian population.[7,8]

Compared to the US sample studied by Correll et al,[2] our patients had lower rates of obesity, and a smaller proportion had elevated fasting glucose and triglyceride levels. This finding may reflect population level differences between the United States[9] and Australia.[8]

The participants in this study tend to be excluded from most research, as they are involuntary and behaviorally disturbed and often do not have capacity to give informed consent. It is essential that service level studies are undertaken to provide basic information about their rates of physical comorbidity. It does appear that these acutely admitted patients, many of whom were not receiving treatment prior to admission, have about the same level of cardiometabolic risk as the general population. From a metabolic perspective, they are healthier than people engaged in ongoing psychiatric treatment.[2,3] This is consistent with the findings of Foley and Morley,[10] who reported that, prior to treatment, first-episode psychosis patients had normal levels of cardiovascular risk, assessed using weight or metabolic indices, but their risk increased after first exposure to any antipsychotic drug.

Selecting medications that do not exacerbate cardiometabolic risk is important in this population. While in the short-term treatment of acute behavioral disturbance the sedative properties of a drug may outweigh the metabolic risks, consideration should be given to switching to a drug with a more favorable metabolic profile prior to discharge. It is also important that patients with metabolic measures requiring treatment receive the same level of general medical care as other members of the community.

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