

MEETING ABSTRACT

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# Association of weight gain and metabolic syndrome in patient taking Clozapine: a 8-year cohort study

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## Background

Metabolic syndrome is an important side effect associated with clozapine. It has been hypothesized that weight gain contributes to the development of metabolic syndrome, but a direct diabetogenic effect has also been suggested. We conducted an 8-year cohort study to determine the association between weight gain and metabolic parameters among schizophrenic patients on clozapine.

## Materials and methods

The subjects were hospitalized schizophrenic patients who began to receive clozapine and subsequently had monthly body weight monitoring during the entire study period. Chart reviews were conducted to obtain gender, age at initiation of clozapine treatment, baseline Body Mass Index (BMI), BMI changes after the initiation of clozapine treatment, treatment duration with clozapine and concomitant psychotropic medications. Anthropometric and biochemical measurements were performed to determine the presence of metabolic syndrome.

## Results

Patients were maintained on clozapine for an average treatment duration of  $56.0 \pm 27.8$  (range 5 to 96) months. The prevalence of metabolic syndrome was 28.7%. The cohort regression models showed that baseline BMI ( $p < 0.0001$ ) and BMI change after clozapine treatment ( $p < 0.0001$ ) were significant factors for metabolic syndrome as were most metabolic parameters except hyperglycemia and diabetes mellitus, which were related to treatment duration ( $p < 0.05$ ).

## Conclusions

For patients treated with clozapine, metabolic syndrome and most metabolic parameters were related to weight gain; however, glucose dysregulation was associated with treatment duration independent of weight gain. The results confirm that monitoring body weight is important, but periodic monitoring of blood sugar may also be required for clozapine patients who do not have significant weight gain.

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## References

1. Henderson DC, Cagliero E, Copeland PM, et al: Glucose metabolism in patients with schizophrenia treated with atypical antipsychotic agents: a frequently sampled intravenous glucose tolerance test and minimal model analysis. *Arch Gen Psychiatry* 2005, **62**:19-28.
2. Henderson DC, Copeland PM, Borba CP, et al: Glucose metabolism in patients with schizophrenia treated with olanzapine or quetiapine: a frequently sampled intravenous glucose tolerance test and minimal model analysis. *J Clin Psychiatry* 2006, **67**:789-797.
3. Howes OD, Bhatnagar A, Gaughran FP, et al: A prospective study of impairment in glucose control caused by clozapine without changes in insulin resistance. *Am J Psychiatry* 2004, **161**:361-363.
4. Lamberti JS, Costea GO, Olson D, et al: Diabetes mellitus among outpatients receiving clozapine: prevalence and clinical-demographic correlates. *J Clin Psychiatry* 2005, **66**:900-906.

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