

A Case Report on Clozapine induced Hypertriglycerdemia.

Dr.Anumol Paulose^{1*}, Dr.SHARON EMILIA JAMES¹, Dr.Beena.P²

¹Pharm D, KVM College of Pharmacy, Kokkothamangalam, Cherthala, Kerala, India

²Principal, KVM College of Pharmacy, Kokkothamangalam, Cherthala, Kerala, India

Pharm D^{1*}

KVM College of pharmacy, Cherthala, India^{1*}

ABSTRACT

Dyslipidemia is one of the complication occurred with the use of Clozapine .We present a 29 year old male having Schizophrenia and was on Clozapine 100 mg twice a daily and he showed an abrupt increase in blood cholestrol level. We have done Naranjo Causality Assesment to establish the relationship between the drug and observed adverse effects..Dyslipidemia is considered as one of the rare ADR of Clozapine. A thorough Past Medication History Interview is therefore helpful in identifying rare adverse events.

INTRODUCTION

Individuals diagnosed with schizophrenia often experience various health issues due to lifestyle factors like a high incidence of smoking, unhealthy eating habits, self-neglect, and difficulties accessing medical care. Atypical antipsychotic drugs, notably clozapine, have gained widespread use for managing schizophrenia, showcasing high effectiveness, especially in refractory cases.

Despite their superiority in mitigating extrapyramidal symptoms and tardive dyskinesia compared to typical antipsychotics, atypical antipsychotics like clozapine pose unique challenges. They can lead to weight gain and metabolic disruptions, altering glucose metabolism, and elevating cholesterol and lipid levels, thereby heightening the risk of cardiovascular events such as strokes and heart attacks. Studies have revealed a significant rise in triglyceride and cholesterol levels after five years of clozapine treatment.

It is noteworthy that there is a dearth of case reports in existing literature detailing the sudden onset of hypertriglyceridemia without accompanying weight gain or glucose irregularities in individuals commencing clozapine therapy. Within this context, we present an exceptional case report highlighting the swift development of hypertriglyceridemia within a mere two weeks of initiating clozapine treatment.

CASE HISTORY

A 29 year old male with Past history of Shizophrenia was admitted on the Psychiatric Department with chief complaints of giddiness, blurred vision & general weekness. He had a history of increased intake of sugary liquids 3-4 days. He was on Clozapine for past 3 months and the triglyceride level was 390mg/dL on admission and his HDL was 20mg/dL.He was managed with Tab. Serroglitazar 4mg. Causality assessment was performed using WHO Causality Assessment scale and Naranjo scale, the event was found to be Probable and Severity was assessed as moderate.

DISCUSSION

Clozapine shown to be an effective antipsychotic in schizophrenic patients, however they are frequently associated with many adverse effects including metabolic disturbances like diabetics mellitus. Dyslipidemia has detrimental effects on endothelial function. Endothelial injury arises through the accumulation of excessive lipids which eventually leads to atherosclerosis. Specifically, the infiltration of monocytes and T helper type-1 cells between dysfunctional endothelial cells results in the proliferation of smooth muscle cells and lipid-filled macrophages to form fibrous plaques characteristic of atherosclerosis. Every patient should have a full and thorough Past Medication History Interview by the Clinical Pharmacists. The metabolic syndromes can be improved dramatically when the offending agent is gradually stopped by dose titrations. Sudden withdrawal should not be done as this may lead to refractory Schizophrenia. Some authors believe that the changes in serum lipid concentrations; as seen in this case, it reflects naturally occurring intra-individual biological variations. It is well-known that serum lipid concentrations fluctuate considerably within individuals over relatively short periods. Attributed variables include intrinsic factors (i.e., hormonal variation and illness), extrinsic factors (i.e., diet), and biological factors. The mechanisms explaining this rapid variation in serum lipid concentrations lies in intrinsic factors related to their biosynthesis and tissue use as regulated by genetic factors and their interactions with extrinsic factors

To explore whether antipsychotics exert acute effects on lipid levels and other metabolic profile, a study had been conducted on mice where an intraperitoneal injection of clozapine was given. Clozapine administration rapidly induced direct transcriptional effects in the liver through genes directly controlling transcription factors, sterol regulatory element-binding protein transcription factors, peroxisome proliferator-activated receptor, and liver X receptors. This facilitated hepatic lipid deposition by upregulating lipogenesis as these genes are involved in fatty acid biosynthesis, independent of food intake and weight gain. This resulted in increase in levels of triglycerides, phospholipids, and cholesterol within 48hr. The treatment of dyslipidemia focuses on stopping the offending medicine as soon as possible after it is identified, as well as prescribing alternative agent for reducing the symptoms associated with disease.

CONCLUSION

The case report highlights Clozapine induced weight gain in an 29 year old male patient for Schizophrenia. Furthermore this case point out the importance of blood cholesterol especially triglycerides monitoring at regular intervals in patients receiving Clozapine and also the need for a better communication by means of providing counselling on medications as well as lifestyle modifications and by giving patient information leaflets.

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