

## Indomethacin induced psychosis

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Indomethacin is, commonly prescribed, a non-steroidal anti-inflammatory drug (NSAID). Our information about the side effects on the CNS is limited. Cases about indomethacin induced psychosis have been reported, although the frequency of psychiatric reactions due to use of NSAID is unknown. Indomethacin induced psychosis and cognitive changes are more frequent in elderly patients. In this case, we present psychotic symptoms after the use of indomethacin with diagnosis of ankylosing spondylitis (AS) and discussed the possible mechanisms that lead to psychosis.

A 53 years old, female patient presents autism, no contact to anyone, approximately for two weeks; she has been collecting appliances in a corner at home. She thinks that she was spelled by relatives. Two days ago in the garden, she suddenly yelled and ran out of home. She was brought to

psychiatric emergency room and hospitalized for diagnosis and treatment. In her history, no psychiatric symptom has been recorded. In her family history, no psychiatric disorder has been identified. The patient did not use psychoactive substances. She has diagnosis of AS and she has been medicated with indomethacin 50 mg/d, naproxen 750 mg/d for four months regularly. In psychiatric evaluations, we observed the diminished emotional expression, irritable mood, disorganized behavior and increased psychomotor activity. She has delusions like 'there is a conspiracy threat to me' and 'I am cursed'. She had insomnia and lack of insight. Physical examination and laboratory tests and MRI showed no pathology. The patient's psychiatric symptoms were thought to be due to the use of indomethacin. For the treatment of psychotic symptoms, olanzapine 5 mg/day was started and indomethacin was discontinued. Three days after cessation of indomethacin, patient had significant clinical improvement and discharged at the request of the family. One week after discharge, patient displayed significant improvement in symptoms; her emotional expression, skepticism, and psychotic symptoms were recovered. Within a month, all psychotic symptoms disappeared.

In this article, we present a case about arising and progressive psychotic symptoms, started after 4 months use of indomethacin resolved following discontinuation of indomethacin. This effect can be explained with dopamine concentration in brain circuits. An experimental study conducted in rats has shown the use of indomethacin affects by changing the concentration of endogenous glutamate antagonist namely kynurenic acid and increases dopamine levels in the mesolimbic dopamine pathway. Another experimental study conducted in rats has shown that the use of indomethacin had inhibitory effect on COX1 and COX2, so affects PGE2 to alter catecholamine levels in the CNS. Change of the concentration of dopamine in the mesolimbic pathway may predict the emergence of psychotic symptoms. In similar cases, indomethacin was used in a dose range between 25 and 200 mg/day and history of indomethacin was less than 24 hours in one case. In our case the indomethacin was using as 50 mg/day for four months regularly. In this case, we aim that to be careful, use of indomethacin or other COX1 and COX2 inhibitors for patient's psychotic disorder or psychotic disorder risk factors, especially in elderly patients beginning with lower doses is important.

**Keywords:** indomethacin, psychosis, non-steroidal anti-inflammatory