

Drug Information Center

Second generation anti-psychotic drugs effect on negative symptoms of schizophrenia versus first generation

Schizophrenia is a severe brain disorder in which people interpret reality abnormally. Schizophrenia may result in some combination of hallucinations, delusions, and extremely disordered thinking and behavior. Schizophrenia involves a range of problems with thinking (cognitive), behavior or emotions (1) .

Signs and symptoms of schizophrenia include positive and negative symptoms.

Positive symptoms: delusion, hallucination, disorganized thinking (speech) and abnormal motor behavior. Negative symptoms effect on ability to function normally (lack emotion , lack eye contact , flat affect , decrease talking , loss of interest and decrease the self-care) (1).

Schizophrenia treated with antipsychotic and other agents like antidepressants and mood stabilizers (lithium, carbamazepine, valproic acids).

Antipsychotics work by altering the effect of certain chemicals in the brain, called dopamine, serotonin, noradrenalin and acetylcholine that effect on patient behavior, mood and emotions. (2)

There are two types of antipsychotic:

First generation (typical antipsychotic): chlorpromazine, flupentixol, haloperidol, levomepromazine, pericyazine, perphenazine, pimozide, sulpiride, trifluoperazine, and zuclopenthixol. Second generation (atypical antipsychotic): amisulpride, aripiprazole, clozapine, olanzapine, quetiapine, risperidone and sertindole.(2)

The differences between first and second generation antipsychotic are that first generation block dopamine, however the second generation block dopamine and serotonin, also first generation has more extra pyramidal side effects than second; however the second generation has more metabolic side effects.(2)

Many studies made to compare the efficacy of first and second generation on negative symptoms. (3-6)

Addington DE , Mohamed S ,and Rosenheck RA demonstrated in their study that there was no differences between any second generation and the first generation antipsychotic.(3)

A meta analysis for clinical trials was held to compare the efficacy of (amisulpride , haloperidol, olanzapine, quetiapine , risperidone and ziprasidone) ,and the results showed that most of these antipsychotic are effective in the treatment of negative symptoms , but amisulpride and ziprasidone showed higher effect.(4)

Another meta-analysis done by Leucht S , Corves C and Arbter D in 2009 to compare nine second-generation antipsychotic drugs with first-generation drugs for overall efficacy , positive, negative and depressive symptoms, relapse, quality of life, extrapyramidal side-effects, weight gain, and sedation.

The result showed that (amisulpride , clozapine , olanzapine, and risperidone) , better than first-generation antipsychotic drugs for overall efficacy but the other second-generation drugs were not more efficacious than the first-generation drugs even on negative symptoms . (5)

Another study that done by Stahl SM, Malla A and Newcomer JW in 2010 , to compare the negative symptom efficacy and treatment outcomes of ziprasidone (80-160 mg/d given twice a day, mean modal dose of 112 mg/d; and 80-120 mg/d given every day, mean modal dose of 96 mg/d) versus haloperidol (5-20 mg/d, mean modal dose of 12 mg/d) in a randomized, 40-week, double-blind study, followed by a double-blind continuation trial that extended up to 156 additional weeks. They found that ziprasidone was associated with significantly shorter time to remission in negative symptoms and psychosocial recovery. (6)

In conclusion, the efficacy of second generation over first generation on negative symptoms still controversial and need more studies to prove the superiority of second over the first generation.

References:

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