REVIEW ARTICLE

Neuroleptic for management of psychosis

Gudisa Bereda

Bereda G. Neuroleptic for management psychosis. J Addict Clin Res. 2022;6(3):01-02.

ABSTRACT

Antipsychotic medications can support to make psychotic symptoms less intense and infrequent. High potency first generation antipsychotic medications such as haloperidol, thiothixene, and fluphenazine are highly binding to dopamine-2 receptors; they have higher efficacy, more extra pyramidal symptoms, and higher incidence of tardive dyskinesia, less cognitive problems such as less sedation and less cardiovascular side effects. Side effects of risperidone include elevations of serum prolactin; elevated prolactin levels can lead to amenorrhea, galactorrhea, gynecomastia, and sexual dysfunction. Mild to moderate weight gain and mild elevations in serum lipids and glucose may occur in risperidone usage. Risperidone also cause neuroleptic malignant syndrome, seizures, orthostatic hypotension, priapism, blurred vision.

Key Words: *Management; Neuroleptic; Psychosis*

INTRODUCTION

The recent treatments for schizophrenia concentrated on supporting individuals to manage their symptoms, improve individuals day-to-day functioning, and achieve personal life aims, such as completing education, pursuing a career, and having fulfilling relationships [1]. Antipsychotic medications can support to make psychotic symptoms less intense and infrequent.

Mechanism of actions of antipsychotic drugs

Antipsychotic medications block neurotransmission at dopaminergic, 5-serotonergic as well as at adrenergic, cholinergic and histamin-binding receptors. So, antipsychotic action of neuroleptics also depend on a specific profile of action of the drugs on several neurotransmitter receptors, such as 5-serotonin, α1-adrenoceptor, M-cholinoceptor, H1-receptor blocking action [2].

First generation or typical antipsychotics drug

Chlorpromazine was first discovered in 1950 and used frequently neuroleptic medicine for schizophrenia treatment because at that time there is no other discovered antipsychotic drug. Antipsychotic medications have been available since the mid-1950s are called conventional or typical antipsychotics. Chlorpromazine's intensity will reduce the intensity of schizophrenia. Also in this class many other drugs was also discovered by changing structure and activities which are loxapine, fluphenazine, perphenazine, and haloperidol, but these all drugs have a major side effect, extrapyramidal symptoms and this can't be neglected. Therefore these drugs have no longer use [3]. First generation antipsychotic drugs are poorly bind to dopamine-2 (in mesolimbic structure) and they involve low potency medications such as chlopromazine, thioridazine. Because of first generation antipsychotic drugs have lower binding to dopamine-2 receptors; they have lower efficacy, less extra pyramidal symptoms, lower incidence of tardive dyskinesia and more cognitive problems such as more sedation, more anti-cholinergic side effects such as dry mouth, tachycardia, mydriasis, urinary retention, confusion etc and they have more cardiovascular side effects and other side effects [4]. High potency first generation antipsychotics medications such as haloperidol, thiothixene, and fluphenazine are highly binding to dopamine-2 receptors; they have higher efficacy, more extra pyramidal symptoms, and higher incidence of tardive dyskinesia, less cognitive problems such as less sedation and less cardiovascular side effects [5].

Four types of extrapyramidal symptoms

Dystonia

Dystonic reactions are slow in onset and are often seen within 24 hours to 96 hours after a first dose or escalate in dosage. Common signs and symptoms of acute dystonic involve abnormal positioning or spasm of the muscles of the head, involuntary muscle twitches, difficulty with jaw movement, and speech or swallowing.

Akathisia

This is the most common motor side effect such as motor restlessness, unable to sit still of first generation antipsychotic drugs occurs in twenty percent to forty percent of individuals who had taken this drugs. Roughly half of the cases of akathisia present within one month of antipsychotic initiation, though it may present within five to ten days after the first dose or after escalate in dosage.

Pseudo parkinsonism

Perhaps present in 37% to 60% of individuals treated with first generation antipsychotics. The onset of symptoms such as tremor at rest, akinesia, bradykinesia, and stoop gait is often occurs within one to two weeks after dose initiation or dose escalates.

Tardive dyskinesia

Tardive dyskinesia is a movement disorder characterized by abnormal choreiform (rapid, objectively purposeless, irregular, and spontaneous) and athetoid (slow and irregular) movements beginning late in relation to initiation of antipsychotic therapy, bucco-lingual masticatory syndrome, and orofacial movement, jerky movement of tongue & face and eventually entire body affected. It often develops over several months or after at least three months of cumulative exposure to antipsychotics.

Second generation (atypical) antipsychotics drug

In the 1990s, new antipsychotic medications called second-generation or atypical antipsychotics were developed. Second generation antipsychotic drugs were discovered currently and improve schizophrenia treatment with fewer adverse effects than first generation antipsychotic medications. Many medications used for treatment of schizophrenia are having higher risks with lower efficacy. Second generation antipsychotic drugs like clozapine is a strong serotonin antagonist, with strong binding to 5-serotonin, 2A/2C receptor subtypes and also shows affinity with dopaminergic receptors but with weak extent of efficacy. Second generation antipsychotic drugs have historically been much more expensive than the first generation antipsychotic drugs; however risperidone, olanzapine, quetiapine, ziprasidone, aripiprazole, and clozapine are now available in generic formulations [6]. Risperidone was the initial first-line oral second generation antipsychotic drug to become available generically and it has high binding affinity to both serotonin 2A and dopamine-2 receptors and binds to α 1 and α2 receptors, with very little blockade of cholinergic receptors.

Department of Pharmacy, Negelle Health Science College, Guji, Ethiopia

Correspondence: Gudisa Bereda, Department of Pharmacy, Negelle Health Science College, Guji, Ethiopia, E-mail: gudisabareda95@ gmail.com

Received: 05-May-2022, Manuscript No.: puljacr-22-4913; Editor assigned: 07-May-2022, Pre QC No. puljacr-22-4913 (PQ); Reviewed: 21-May-2022, QC No. puljacr-22-4913 (Q); Revised: 26-May-2022, Manuscript No. puljacr-22-4913 (R); Published: 02-Jun-2022, DOI:10.37532/puljacr.22.6(3).01-02

Side effects of risperidone include elevations of serum prolactin; elevated prolactin levels can lead to amenorrhea, galactorrhea, gynecomastia, and sexual dysfunction. Mild to moderate weight gain and mild elevations in serum lipids and glucose may occur in risperidone usage. Risperidone also cause neuroleptic malignant syndrome, seizures, orthostatic hypotension, priapism, blurred vision. Quetiapine is structurally related to clozapine and olanzapine and perhaps beneficial for anxiety and depression. Side effects of quetiapine involves prolactin elevations which are uncommon, postural and orthostatic hypotension, transient sedation, dry mouth, hypertension, back pain, mild weight gain and minor elevations in triglycerides, prolong the QTc interval, elevations of serum transaminase level. Olanzapine was associated with the longest time to treatment discontinuation, suggesting it perhaps different from the other second generation antipsychotics in effectiveness. Side effects of olanzapine have a low rate of extrapyramidal symptoms and causes slight, transient prolactin elevations. Olanzapine causes significant weight gain across the dosage range, olanzapine is also associated with hypertriglyceridemia increased fasting glucose, and new-onset type 2 diabetes (ie, metabolic syndrome), speech difficulty, postural hypotension, antimuscarinic side effects, personality disorders, insomnia, akathisia. Ziprasidone perhaps has slightly less efficacious drug than risperidone and olanzapine. Side effects of ziprasidone include liability for extrapyramidal symptoms, weight gain, and lipid elevations is low but does occur, causes some prolongation of the QTc interval in adults, respiratory tract infections, hyperglycemia, orthostatic hypotension, increased prolactin levels, sexual dysfunction, blood dyscrasias. Aripiprazole is a dopamine modulator, with both antagonist and agonist activity at the dopamine-2 receptor. Side effects of aripiprazole include sedation, nausea and vomiting are the most often observed adverse effects. Other side effects are tremor, blurred vision, dry mouth, orthostatic hypotension, and somnolence. Clozapine is initially treat people with schizophrenia and schizoaffective disorders who have had an inadequate response to other antipsychotics or who have been unable to tolerate other drugs due to extrapyramidal symptoms. Side effects of clozapine include agranulocytosis, neuromuscular hypersensitivity, and pseudomembranous colitis, and black hairy tongue, rash. Asenapine is confirmed for the acute treatment of schizophrenia in adults. Asenapine tablets must be placed under the tongue and allowed to dissolve completely; tablets should not be chewed or swallowed. Patients should not drink or eat for ten minutes after administration. Common adverse effects include somnolence, dizziness, and akathisia. It has revealed little effect on metabolic parameters and weight change, rare occurrence of hypersensitivity reactions, including anaphylaxis and angioedema. Lurasidone antagonizes dopamine-2 and 5-serotonin 2A receptors. Adverse reactions of lurasidone include somnolence, akathisia, nausea, parkinsonism, and agitation, only a small effect on body weight and causes minimal changes in other metabolic parameters [7-12].

CONCLUSION

The recent treatments for schizophrenia concentrated on supporting individuals to manage their symptoms, improve individuals day-to-day functioning, and achieve personal life aims, such as completing education, pursuing a career, and having fulfilling relationships. First generation antipsychotic drugs are poorly bind to dopamine-2 in mesolimbic structure and they involve low potency medications such as chlopromazine, thioridazine. Clozapine is initially treat people with schizophrenia and schizoaffective disorders who have had an inadequate response to other antipsychotics or who have been unable to tolerate other drugs due to extrapyramidal symptoms. Side effects of clozapine include agranulocytosis, neuromuscular hypersensitivity, and pseudomembranous colitis, and black hairy tongue, rash.

ACKNOWLEDGMENTS

The author would be grateful to anonymous reviewers for the comments that increase the quality of this manuscript.

Data Sources

Sources searched include , Research Gate, PubMed, NCBI, NDSS, PMID, PMCID, Scopus database, Scielo and Cochrane database. Search terms included: neuroleptic for management psychosis.

Funding

None

Availability of data and materials

The datasets generated during the current study are available with correspondent author.

Competing interests

The author has no financial or proprietary interest in any of material discussed in this article.

REFERENCES

1. Goldsack JC, Coravos A, Bakker JP, Bent B, Dowling AV, Fitzer-Attas C, Godfrey A, Godino JG, Gujar N, Izmailova E, Manta C. Verification, analytical validation, and clinical validation (V3): the foundation of determining fit-for-purpose for Biometric Monitoring Technologies (BioMeTs). npj digital Medicine. 2020; 3(1):1-5.

2. Umbricht D, Cheng WY, Lipsmeier F, Bamdadian A, Lindemann M. Deep learning-based human activity recognition for continuous activity and gesture monitoring for schizophrenia patients with negative symptoms. Frontiers in Psychiatry. 2020;11:574375.

3. Strauss GP, Raugh IM, Zhang L, Luther L, Chapman HC, Allen DN, Kirkpatrick B, Cohen AS. Validation of accelerometry as a digital phenotyping measure of negative symptoms in schizophrenia. Schizophrenia. 2022;8(1):1-6.

4. Karow A, Wittmann L, Schöttle D, Schäfer I, Lambert M. The assessment of quality of life in clinical practice in patients with schizophrenia. Dialogues in clinical neuroscience. 2022.

5. Raugh IM, James SH, Gonzalez CM, Chapman HC, Cohen AS, Kirkpatrick B, Strauss GP. Geolocation as a digital phenotyping measure of negative symptoms and functional outcome. Schizophrenia bulletin. 2020;46(6):1596-607.

6. Yates T, Gray LJ, Henson J, Edwardson CL, Khunti K, Davies MJ. Impact of depression and anxiety on change to physical activity following a pragmatic diabetes prevention program within primary care: pooled analysis from two randomized controlled trials. Diabetes Care. 2019;42(10):1847-53.

7. Firth J, Stubbs B, Vancampfort D, Schuch FB, Rosenbaum S, Ward PB, Firth JA, Sarris J, Yung AR. The validity and value of self-reported physical activity and accelerometry in people with schizophrenia: a population-scale study of the UK Biobank. Schizophrenia bulletin. 2018;44(6):1293-300.

8. Raugh IM, James SH, Gonzalez CM, Chapman HC, Cohen AS, Kirkpatrick B, Strauss GP. Digital phenotyping adherence, feasibility, and tolerability in outpatients with schizophrenia. Journal of Psychiatric Research. 2021;138:436-43.

9. Fulford D, Mote J, Gonzalez R, Abplanalp S, Zhang Y, Luckenbaugh J, Onnela JP, Busso C, Gard DE. Smartphone sensing of social interactions in people with and without schizophrenia. Journal of Psychiatric Research. 2021;137:613-20.

10. Strassnig MT, Miller ML, Moore R, Depp CA, Pinkham AE, Harvey PD. Evidence for avolition in bipolar disorder? A 30-day ecological momentary assessment comparison of daily activities in bipolar disorder and schizophrenia. Psychiatry research. 2021;300:113924.

11. Strassnig MT, Harvey PD, Miller ML, Depp CA, Granholm E. Real world sedentary behavior and activity levels in patients with schizophrenia and controls: An ecological momentary assessment study. Mental health and physical activity. 2021;20:100364.

12. Ahmed AO, Kirkpatrick B, Galderisi S, Mucci A, Rossi A, Bertolino A, Rocca P, Maj M, Kaiser S, Bischof M, Hartmann-Riemer MN. Cross-cultural validation of the 5-factor structure of negative symptoms in schizophrenia. Schizophrenia bulletin. 2019;45(2):305-14.