

A REVIEW: ANTI-PSYCHOTIC DRUGS AND ITS ADVERSE EFFECTS ON HEALTH

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Abstract

The purpose of the study is to summarize the main research findings pertaining to adverse effects of antipsychotic drugs. Narrative review of recent research paper known to the authors was extracted. Fourteen effects were reported by 57% or more participants, most commonly: 'Drowsiness, feeling tired, sedation' (92%), 'Loss of motivation' (86%), 'Slowed thoughts' (86%), and 'Emotional numbing' (85%). Suicidality was reported to be a side effect by 58%. Older people reported particularly poor outcomes and high levels of adverse effects. Duration of treatment was unrelated to positive outcomes but significantly related to negative outcomes. Most respondents (70%) had tried to stop taking the drugs. The most common reasons people wanted to stop were the side effects (64%) and worries about long-term physical health (52%). Most (70%) did not recall being told anything at all about side effects. Nurses can optimize patient care by reinforcing the importance of taking medications as recommended and referring them to pharmacists or other professionals if specific questions about dosing or drug interactions arise. The review concludes that antipsychotics are an important line of treatment of psychotic disorders and are widely used. There are many side-effects of the antipsychotic drugs but with proper observation and health maintenance minimal side-effect treatment line can be given.

Keywords: Adverse Effect, Anti-Psychotic, Nurses Role

INTRODUCTION

Antipsychotics are the first-line evidence-based treatment for schizophrenia and other primary psychotic disorders. Some antipsychotics are also approved for treatment of bipolar disorder, treatment-resistant depression, autism, or Tourette's disorder. In addition, these medications are prescribed off-label for individuals with other conditions, such as borderline personality disorder, obsessive-compulsive disorder, anorexia nervosa, insomnia, delirium, and various dementia syndromes including Alzheimer's disease. The utility of these drugs is hampered by their adverse effects, which must be weighed against their variable benefits for these conditions. In persons with schizophrenia, antipsychotic medications often provide dramatic symptomatic relief for hallucinations and delusions, and improvement for disorganized thoughts and behaviour. However, because they are associated with a multitude of adverse effects, some of which are medically serious and many of which affect patient attitudes toward treatment, discussions about these medications are often dominated by their side effects rather than their benefits. This is highlighted by the fact that experts and guidelines commonly recommend choosing antipsychotic medications based on side effect profiles, which vary considerably, rather than efficacy, which is considered to be similar. For non-psychotic disorders and for off-label uses, for which the evidence of antipsychotic benefits is often unclear, side effects are vitally important, because the ratio of benefits to risks is lower and significantly influences the

decision to use these medications.

TYPES OF ANTIPSYCHOTICS

This category of medications falls into two categories:

1. **Typical Antipsychotics, or First-Generation Antipsychotic Drugs.** The typical, or conventional, antipsychotics were first developed in the 1950s. Haldol (haloperidol) and Thorazine (chlorpromazine) are the best known typical antipsychotics. They continue to be useful in the treatment of severe psychosis and behavioural problems when newer medications are ineffective. However, these medications do have a high risk of side effects, some of which are quite severe. In response to the serious side effects of many typical antipsychotics, drug manufacturers developed another category referred to as atypical antipsychotics.
2. **Atypical Antipsychotics, or Second-Generation Antipsychotic Drugs.** These new medications were approved for use in the 1990s. Clozapine, asenapine, olanzapine, quetiapine, paliperidone, risperidone, sertindole, ziprasidone, zotepine, and aripiprazole are atypical antipsychotic drugs. With the discovery of clozapine in 1959, it became evident that this drug was less likely to produce extrapyramidal effects (physical symptoms such as tremors, paranoia, anxiety, dystonia, etc. as a result of improper doses or adverse reactions to this class of drug) in humans at clinically effective doses than some other types of antipsychotics. Clozapine was categorized as the first atypical antipsychotic drug. This category of drugs has also been of great value in studying the pathophysiology of schizophrenia and other psychoses.

Commonly prescribed typical antipsychotics include:

Haldol (haloperidol), Loxitane (loxapine), Mellaril (thioridazine), Moban (molindone), Navane (thiothixene), Prolixin (fluphenazine), Serentil (mesoridazine), Stelazine (trifluoperazine), Trilafon (perphenazine), Thorazine (chlorpromazine), Abilify (aripiprazole), Clozaril (clozapine), Geodon (ziprasidone), Risperdal (risperidone), Seroquel (quetiapine) Zyprexa (olanzapine).

POSITIVE AND NEGATIVE EFFECTS OF ANTIPSYCHOTIC MEDICATION

According to a online direct-to-consumer questionnaire conducted by John Read and James Williams a 832 users survey was conducted of antipsychotics, from 30 countries – predominantly USA, UK and Australia. The result showed over half (56%) thought, the drugs reduced the problems they were prescribed for, but 27% thought they made them worse. Slightly less people found the drugs generally 'helpful' (41%) than found them 'unhelpful' (43%). While 35% reported that their 'quality of life' was 'improved', 54% reported that it was made 'worse'. The average number of adverse effects reported was 11, with an average of five at the 'severe' level. Fourteen effects were reported by 57% or more participants, most commonly: 'Drowsiness, feeling tired, sedation' (92%), 'Loss of motivation' (86%), 'Slowed thoughts' (86%), and 'Emotional numbing' (85%). Suicidality was reported to be a side effect by 58%. Older people reported particularly poor outcomes and high levels of adverse effects. Duration of treatment was unrelated to positive outcomes but significantly related to negative outcomes. Most respondents (70%) had tried to stop taking the drugs. The most common reasons people wanted to stop were the side effects (64%) and worries about long-term physical health (52%).

Most (70%) did not recall being told anything at all about side effects.

COMMON ADVERSE EFFECTS OF ANTIPSYCHOTIC AGENTS

The majority of undesirable effects of the antipsychotic agents are extensions of their pharmacologic actions. Additionally, there are some allergic and idiosyncratic adverse effects. In an attempt to limit the emergence of side effects associated with antipsychotic agents, elderly patients should receive lower doses than those used in younger patients. Parenterally administered agents have greater bioavailability as compared with oral dosage forms, and therefore should be dosed accordingly.

One of the key concepts of appropriate antipsychotic therapy is that side-effect profiles should be used as a basis for selecting antipsychotic agents, since it is challenging to differentiate among antipsychotics based on efficacy alone. Using this concept, clinicians should tailor the antipsychotic medication regimen to the individual, incorporating pertinent information to help in selecting an appropriate antipsychotic agent, such as medical history (cardiac or cerebrovascular disease, seizure disorder); medication history (e.g., drug-related orthostatic hypotension); and family history (e.g., diabetes). In patients who complain of poorly tolerated side effects, using an alternative medication should be considered in light of the variety of antipsychotics currently available. Patient and family counselling should take place, including education about the illness, symptoms, prognosis, medication, and other psychosocial interventions and adaptive functioning methods.

Sedation and Cognition: Sedation occurs early in the treatment course and may decrease over time. While oversedation may contribute to cognitive, perceptual, and motor dysfunction, positive effects from medication on cognition have been seen with chronic administration. The agents most frequently implicated in causing sedation are chlorpromazine, thioridazine, mesoridazine, and the atypicals clozapine, olanzapine, and quetiapine. Since cognitive impairment renders the senior's disease profile more chronic and treatment resistant, any change in cognitive status should be evaluated (e.g., to compare with baseline; to rule out delirium).

Extrapyramidal Symptoms (EPS): EPS include akathisia, a restlessness that may present as anxiety and agitation and result in inappropriate medication therapy; dystonia, an abnormal tonic-clonic contractions that may progress and be life threatening; pseudo-parkinsonism, including bradykinesia, rigidity, and tremor; and tardive dyskinesia, an abnormal involuntary movement disorder. It has been estimated that half of patients between 60 and 80 years of age taking traditional antipsychotic agents experience EPS. Comparator trials have revealed a lower incidence of milder EPS with the atypical agents as compared with the traditional (first generation) antipsychotic agents. Olanzapine has a very low incidence of EPS at 10 to 20 mg/day, although many patients receive higher doses in practice.

Anticholinergic: Anticholinergic effects such as constipation, dry mouth, blurred vision, and urinary retention are particularly problematic in the elderly and may contribute to delirium.

They are most common with low-potency traditional antipsychotic agents (e.g., chlorpromazine) and clozapine.

Cardiovascular: Cardiovascular effects include electrocardiographic (ECG) changes and orthostatic hypotension (OH). ECG changes may include tachycardia from anticholinergic effects

or reflex tachycardia from alpha-adrenergic blockade; flattened T waves; ST segment depression; and prolongation of QT and PR intervals. OH may result when antipsychotics block beta-adrenergic receptors, and can lead to falls and fractures in the elderly. OH is likely to occur with low-potency traditional antipsychotics (e.g., chlorpromazine, thioridazine) and with atypical agents such as clozapine, risperidone, olanzapine, and quetiapine. Caution is necessary with use of these agents in seniors with pre-existing cardiac or cerebrovascular disease, and in those taking diuretics or concomitant drugs that can prolong the QTc interval. A baseline ECG and baseline serum potassium and magnesium levels are recommended in patients >50 years of age. Antipsychotics most likely to cause ECG changes are thioridazine and the atypicals clozapine and ziprasidone.

Weight Gain, Diabetes, and Lipid Abnormalities: Weight gain is a substantially significant side effect of antipsychotic agents and is frequently reported in both adults and children. Olanzapine and clozapine cause more weight gain than other atypical antipsychotic agents (i.e., >7% of the baseline body weight in 40% or more of patients). Minimal weight gain has been associated with both ziprasidone and aripiprazole.

Elevations in serum triglycerides (TGs) and cholesterol have been reported with at least some of the atypical antipsychotic agents. There is a reported lower risk for change in serum lipid or cholesterol levels with risperidone, ziprasidone, and aripiprazole. The risk for the development of metabolic syndrome (i.e., syndrome X: elevation in glucose, TGs, weight/abdominal circumference, blood pressure; low HDL) and diabetes associated with the atypical antipsychotic agents warrants a general health screening and monitoring; if abnormalities occur in patients treated with these agents, intervention should be prompt.

Prolactin: In seniors, an increase in prolactin levels (i.e., due to dopamine blockade) can cause galactorrhea in women and gynecomastia and galactorrhea in men; these effects are more common with the traditional antipsychotic agents and with risperidone and can be dose related. Using an alternative agent with no appreciable sustained effect on prolactin (e.g., olanzapine, quetiapine, ziprasidone, aripiprazole) is an option.

MANAGEMENT OF COMMON ADVERSE EFFECTS OF ANTIPSYCHOTIC MEDICATIONS

The benefits of antipsychotic medications are sometimes obscured by their adverse effects. These effects range from relatively minor tolerability issues (e.g., mild sedation or dry mouth) to very unpleasant (e.g., constipation, akathisia, sexual dysfunction) to painful (e.g., acute dystonias) to disfiguring (e.g., weight gain, tardive dyskinesia) to life-threatening (e.g., myocarditis, agranulocytosis). Importantly, adverse effect profiles are specific to each antipsychotic medication and do not neatly fit into first- and second-generation classifications. This paper reviews management strategies for the most frequent side effects and identifies common principles intended to optimize net antipsychotic benefits. Only use antipsychotics if the indication is clear; only continue antipsychotics if a benefit is discernible. If an antipsychotic is providing substantial benefit, and the adverse effect is not life-threatening, then the first management choice is to lower the dose or adjust the dosing schedule. The next option is to change the antipsychotic; this is often reasonable unless the risk of relapse is high. In some instances, behavioral interventions can be tried. Finally, concomitant medications, though generally not desirable, are necessary in many instances and can provide considerable relief. Among concomitant medication strategies, anticholinergic medications for dystonias and parkinsonism are often effective; beta-blockers and anticholinergic medications are useful for

akathisia; and metformin may lead to slight to moderate weight loss. Anticholinergic drops applied sublingually reduce sialorrhea. Usual medications are effective for constipation or dyslipidemias. The clinical utility of recently approved treatments for tardive dyskinesia, valbenazine and deutetrabenazine, is unclear.

ROLE OF NURSE IN ADMINISTRATION OF ANTIPSYCHOTIC DRUGS

There are several specific areas in which nurses play a key role in optimizing care for patients with antipsychotic side effects

Nurses should be aware that all patients taking antipsychotics, especially long term, should be monitored for the development of antipsychotic-induced abnormal movements. Ideally, screening would occur before antipsychotic initiation and any change in therapy (antipsychotic switch or dose increase/decrease), with regular assessments throughout the course of treatment. In many practices, patients are regularly checked for other adverse events associated with antipsychotics (eg, orthostatic hypotension, hyperprolactinemia, weight gain). An assessment of the patient's movements could be incorporated into that protocol. Screening may be informal, including simple visual observations; regular assessments can be more formal, using validated scales. These include the Barnes Akathisia Rating Scale for akathisia, the Simpson-Angus Scale for parkinsonism, and the Abnormal Involuntary Movement Scale for Tardive Dyskinesia. The Extrapyramidal Symptom Rating Scale can be used to differentiate between parkinsonism, akathisia, dystonia, and dyskinesia. It should be noted, however, that the diagnostic application of these scales is limited; they are more suited for assessing the severity of abnormal movements and monitoring changes over time. Diagnoses of antipsychotic-induced movement disorders are based on clinical presentation and the patient's psychiatric and medical history, including exposure to antipsychotics or other dopamine-receptor blocking agents such as antiemetics (eg, metoclopramide); a few cases of antidepressant-associated TD have also been reported.

Education, Resources, and Treatment Support Nurses play a crucial role in building supportive and therapeutically effective relationships with patients and their caregivers. As such, they are uniquely positioned to educate patients regarding the risks for antipsychotic-induced movement disorders. More importantly, they can reassure patients that effective treatments may be available if the appropriate diagnosis is made. In addition, nurses and other health care professionals can point patients to resources such as Web sites that provide support and advocacy for patients and families. Perhaps the greatest impediment to the discussion of unwanted antipsychotic effects is the fact that the offending medication cannot be eliminated. Patients often require the antipsychotic to maintain psychiatric stability; discontinuing the drug or changing the dose may not be ideal or even feasible. Nurses can optimize patient care by reinforcing the importance of taking medications as recommended and referring them to pharmacists or other professionals if specific questions about dosing or drug interactions arise.

CONCLUSION

The review concludes that antipsychotics are an important line of treatment of psychotic disorders and are widely used. There are many side-effects of the antipsychotic drugs but with proper observation and health maintenance minimal side-effect treatment line can be given.

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