Schizophrenia and Medication

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Schizophrenia in virtually all cases requires lifelong treatment, even when symptoms have subsided. Treatment includes better coping skills in everyday life, strategies to reduce stress and become aware of early warning signs of a psychotic episode, psychotherapy to better manage life, and medication. Medication may be life-long, but does not have to be.

Medication for an independent, autonomous life

Treatment with medication (antipsychotics) and psychosocial therapy can help manage the condition. In some cases, hospitalization may be needed. However, medication has drastically reduced the need for hospitalization. Many patients who had to be hospitalized for most of their lives in earlier times can now care for their families or work as highly paid managers in large corporations.

Medication allows people with schizophrenia to lead normal lives. Especially the newer generation of antipsychotics has increased the quality of life significantly, while reducing some of the side-effects of the earlier generation of antipsychotic medication. Still, antipsychotic medication has overall still not reached the low side-effect profiles of newer antidepressants. While tardive dyskinesia has become rarer with the second-generation antipsychotics (SGAs) and is virtually absent in clozapine especially and the potentially lethal malignant neuroleptic syndrome is a very rare phenomenon, they are often associated with side-effects from weight gain (especially olanzapine) to drowsiness (quetiapine). It seems that we are only willing to accept the greater potential side-effects of modern antipsychotics because of the enormous improvement they can bring in a patient's quality of life.

The dopamine hypothesis

Medication still is the cornerstone of schizophrenia treatment, and antipsychotic substances are most commonly prescribed to treat this mental illness which can cause unbelievable suffering for the patient and his or her family. They are thought to control symptoms by affecting the dopamine neurotransmission system in the brain. Blocking or partially blocking the effect of dopamine at the D_2 and D_4 receptors on nerve fibers connecting cells via the synapses seems to be effective against the positive symptoms of schizophrenia, such as hallucinations and paranoia. This is called the dopamine hypothesis, which is supported by empirical evidence but still liable to some debate, especially as possible co-involvement of other neurotransmitters is concerned. Since antipsychotics usually affect other neurotransmitter systems as well, such as the serotonin neurotransmission, there may be other ways that contribute to the overall effect.

Receptor affinity, effectiveness and side-effects

The complex effect of antipsychotics in various centers of the brain and the effect of antipsychotics on various neurotransmitter systems and various receptor subclasses is responsible for the variety of effects and side-effects of an antipsychotic.

Some ‘side-effects’ might be desirable. Newer antipsychotics with an effect on the serotonin transmitter pathway, such as Olanzapine (Zyprexa®), may, for example, be useful in some cases of sleep abnormalities, eating disorders and obsessive thoughts. The fact that Olanzapine (Zyprexa®) has a sedative effect is preferred by many patients to help them sleep. In some cases, it is used as a non-addictive sleep medication, although sleep inducing antidepressants are here to be preferred because of the usually better side-effect profile.

Monotreatment and lowest effective dose

The goal of treatment with antipsychotic medications is to effectively manage signs and symptoms at the lowest possible dose. Unfortunately, minimum effective doses have not been studied as extensively as the side-effects. The preference should always be for the use of a

single substance (monotreatment), but in some cases this may not be possible. Switching the antipsychotic, especially from the second generation, in many cases allows for monotreatment with one substance.

Compliance

Because medications for schizophrenia can cause serious side effects, people with schizophrenia may be reluctant to take them. Willingness to cooperate with treatment may affect drug choice. For example, someone who is likely to forget medication in the sense of being ambivalent towards it, especially in psychotic phases, may need to be given injections instead of taking a pill. Among the most serious side-effects are the extrapyramidal symptoms (EPS) including tardive dyskinesia, a condition with involuntary movements which is largely untreatable. But antipsychotics can also have an effect the functioning of the heart (QT prolongation), blood cells and enzymes, the liver and other organs.

Common antipsychotics

First-generation antipsychotics

The first-generation antipsychotics have frequent and potentially significant neurological side effects, including the possibility of developing a movement disorder (tardive dyskinesia) that may or may not be reversible. First-generation antipsychotics include:

- Chlorpromazine
- Fluphenazine
- Haloperidol (Haldol®)
- Perphenazine

These antipsychotics are often cheaper than second-generation antipsychotics, especially the generic versions, which can be a consideration when long-term treatment is necessary, but the better side-effect profile of the second-generation antipsychotics should outweigh this. Especially in psychiatric emergencies or when second-generation antipsychotics are not effective enough drugs like Haloperidol may have to be used, still with the aim to replace it

with a second-generation antipsychotic in the future. However, in some cases an acceptable quality of life cannot be obtained without the use of the old first-generation antipsychotics.

Second-generation antipsychotics

These newer, second-generation medications are generally preferred because they pose a lower risk of serious side effects than do first-generation antipsychotics. The most important representatives of the second-generation antipsychotics are:

- Aripiprazole (Abilify®)
- Olanzapine (Zyprexa®)
- Quetiapine (Seroquel®)
- Risperidone (Risperdal®)
    - and its active metabolite Paliperidone (Invega®)

Clozapine (Clozaril®) may be the only antipsychotic without the risk of EPS.

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