S03-01

INTRODUCING THE PHARMACOLOGY BEHIND TREATMENTS TO UNDERSTAND TREATMENT CHALLENGES

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Receptor-binding profiles of antipsychotics differ, with important implications for treatment efficacy and tolerability. Receptors implicated in clinical response and adverse effects include dopamine D_2, serotonin $5HT_{1A}$ and $5HT_{2A}$, as well as H_1 histamine, M_1 muscarinic and $alpha_1$ adrenergic receptors. Varying receptor affinities can explain the clinical profile specific to each compound, including adverse events such as weight gain, metabolic disturbance, hypotension, hyperprolactinaemia and extrapyramidal symptoms.

Receptor profiles also play a role when switching between antipsychotics. Consideration of the differences between agents being withdrawn and introduced can minimise adverse events and ensure efficacy is maintained. Using strategies such as cross-titration, the consequences of receptor upregulation, and amplified or muted treatment effects can be minimised. Pharmacokinetic profiles of the agents should also be considered, as withdrawing an agent with a long half-life may lead to hangover effects.

In all patients, a pharmacological basis should be used to select agents with minimal drug-related adverse events. Patients at risk of metabolic syndrome, for example, may benefit from an agent with a low risk of weight gain, such as aripiprazole or ziprasidone, while agents associated with hypotension, such as clozapine, risperidone or quetiapine, should be avoided in elderly patients to reduce the risk of falls. The route of administration also impacts treatment decisions and appropriate use of co-medications needs to be considered carefully.

By paying attention to the pharmacology of antipsychotic agents, physicians can balance good efficacy and a low incidence of adverse events, thereby optimising treatment for their patients with schizophrenia and bipolar disorder.

https://doi.org/10.1016/S0924-9338(09)70250-0 Published online by Cambridge University Press