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Neurological Adverse Drug Reactions: From Neuropsychiatric Effects to Neurological Disorders

Dave Stephen*

Department of Pharmacy, University of the State of Morelos, Morelos, Mexico,

Commentary

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***For Correspondence:**
Dave Stephen, Department of Pharmacy, University of the State of Morelos, Morelos, Mexico

Email: dave.stephen@umassmed.edu

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DESCRIPTION

Many medications have the potential to affect mood, cognition, and behaviour, leading to neuropsychiatric ADR. For example, certain antidepressants and antipsychotics may cause sedation, agitation, or changes in mood. Benzodiazepines, commonly prescribed for anxiety and sleep disorders, can impair cognitive function and cause paradoxical reactions. Stimulant medications used to treat Attention Deficit Hyperactivity Disorder (ADHD) may exacerbate anxiety or trigger psychosis in susceptible individuals. Recognizing these neuropsychiatric ADR is essential for adjusting medication regimens and providing appropriate support to patients.

In addition to neuropsychiatric effects, some drugs can lead to the development of neurological disorders. Drug-induced movement disorders, such as tardive dyskinesia and drug-induced parkinsonism, are some examples. These conditions often result from the blockade of dopamine receptors in the brain, disrupting normal motor function. Antipsychotics, antiemetics, and certain antidepressants are among the medications commonly associated with these movement disorders. Early recognition and management are crucial to prevent permanent disability and improve patient outcomes.

Seizures are another potential neurological ADR that can occur with certain medications. Some drugs, particularly those that act on the central nervous system, lower the seizure threshold and increase the risk of epileptic seizures.

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For example, antidepressants, antipsychotics, and certain antibiotics have been implicated in the development of seizures. In individuals with epilepsy, certain medications may exacerbate seizure frequency or provoke status epilepticus, a life-threatening condition requiring immediate intervention. Careful selection of medications and close monitoring are essential in managing these ADR.

While some drugs have been associated with an increased risk of cerebrovascular events such as stroke or Transient Ischemic Attacks (TIAs). Certain vaso constrictive medications, including some migraine treatments and decongestants, may predispose individuals to cerebral ischemia. Similarly, hormonal medications such as oral contraceptives have been linked to an elevated risk of ischemic stroke, particularly in women with other risk factors such as smoking or hypertension. Healthcare providers should weigh the potential benefits of these medications against their risks, especially in individuals with a history of cerebrovascular disease.

The management of neurological ADR requires a multidisciplinary approach involving healthcare providers, pharmacists, and patients. Close monitoring for early signs of ADR, patient education regarding potential side effects, and regular medication reviews are essential components of preventive care. In cases where ADR occur, prompt recognition, dose adjustments, or discontinuation of offending medications may be necessary. Collaboration between healthcare professionals and clear communication with patients are essential for optimizing medication therapy and minimizing the burden of neurological ADR.

Neurological adverse drug reactions encompass a diverse range of effects, from neuropsychiatric symptoms to serious neurological disorders. Healthcare providers must remain vigilant for signs of ADR and collaborate closely with patients to minimize their impact. By understanding the mechanisms, manifestations, and management strategies for neurological ADR, clinicians can optimize medication therapy and improve patient safety and quality of life.

Neurological (ADRs) represent a complex spectrum of effects that can significantly impact patients' well-being. Beyond the more commonly recognized neuropsychiatric effects of medications, such as changes in mood or cognition, certain drugs can induce severe neurological disorders. These conditions may manifest as drug-induced movement disorders like tardive dyskinesia or drug-induced parkinsonism, often stemming from the disruption of dopamine receptors in the brain. Prompt identification and intervention are paramount to mitigate permanent disability and enhance patient outcomes in such cases.

Furthermore, in the case of neurological ADRs, seizures represent another cause for severe concern. A number of drugs, especially those that affect the central nervous system, have the potential to reduce seizure thresholds, which increases the probability of epileptic episodes. Antidepressants, antipsychotics, and specific antibiotics have been implicated in seizure development. For individuals with pre-existing epilepsy, certain drugs may exacerbate seizure frequency or precipitate status epilepticus, necessitating immediate medical attention. Careful medication selection and vigilant monitoring are imperative to address these risks effectively.

Cerebrovascular events, albeit rare, represent another facet of neurological ADRs. Some medications, such as certain migraine treatments and decongestants with vasoconstrictive properties, have been associated with an elevated risk of stroke or Transient Ischemic Attacks (TIAs) by predisposing individuals to cerebral ischemia. Similarly, hormonal therapies like oral contraceptives may amplify the likelihood of ischemic stroke, especially in women with additional risk factors like smoking or hypertension. Healthcare providers must meticulously evaluate the risk-benefit profile of such medications, particularly in patients with a history of cerebrovascular disease.

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To effectively manage and prevent neurological ADRs, a collaborative, multidisciplinary approach is indispensable. This entails vigilant monitoring for early signs of ADRs, comprehensive patient education regarding potential side effects, and regular medication assessments to optimize therapy. In instances where ADRs manifest, timely recognition coupled with appropriate interventions such as dose adjustments or discontinuation of offending medications is crucial. Transparent communication and active engagement between healthcare professionals and patients are fundamental to navigating the complexities of medication therapy and mitigating the burden of neurological ADRs on patient safety and quality of life.