

Adverse drug events related to mood and emotion in paediatric patients treated for ADHD: A meta-analysis

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Abstract

BACKGROUND:

ADHD is frequently comorbid with anxiety and mood disorders, which may increase the severity of inattention and hyperactivity symptoms. Emotional symptoms (anxiety, irritability, mood lability) also affect patients without comorbidity or emerge as adverse drug events. The influence of ADHD drugs on emotional symptoms demands investigation to improve therapies.

METHODS:

Systematic review of trials reporting adverse events in patients pharmacologically treated for ADHD. Meta-analysis of the occurrence of irritability, anxiety, apathy, reduced talk, sadness, crying, emotional lability, biting nails, staring, perseveration, euphoria. Meta-regression analysis.

RESULTS:

Forty-five trials were meta-analysed. The most frequently reported outcomes were irritability, anxiety, sadness, and apathy. Methylphenidates, especially immediate-release formulations, were most studied; amphetamines were half as studied and were predominantly mixed amphetamine salts. Reports on atomoxetine were scant. Meta-analysis showed that methylphenidates reduced the risk of irritability, anxiety, euphoria, whereas they worsened the risk of apathy and reduced talk; amphetamines worsened the risk of emotional lability. Factors influencing risks were study year and design, patients' sex and age, drug dose and release formulation.

LIMITATIONS:

Possible discrepancy between adverse events as indicated in clinical trials and as summarised herein. Confounding due to the aggregation of drugs into groups; uninvestigated sources of bias; incomplete lists of adverse events; lack of observations on self-injury.

CONCLUSIONS:

Methylphenidates appeared safer than amphetamines, although younger patients and females may incur higher risks, especially with high-dose, immediate-release methylphenidates. Only atomoxetine holds a black-box warning, but amphetamines and methylphenidates also did not show a safe profile regarding mood and emotional symptoms.