Reducing the Incidence of Antipsychotic Induced Dystonic Reactions in Children

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Dystonic reactions are a source of great distress to patients and can lead to increased morbidity and mortality. Antipsychotics are among the most reported causes of drug related dystonic reactions in children. While antipsychotics are generally FDA approved psychosis, bipolar disorder and autism, they are used off label for sleep disorders, oppositional defiant disorder, ADHD and other conditions. The prevalence of antipsychotic induced dystonic reactions in children can be as high as 90% with certain medications and the presence of other risk factors. The purpose of this project is to determine if provider education highlighting FDA prescribing guidelines can reduce the incidence of dystonic reactions in children being prescribed antipsychotics in the psychiatric hospital unit. This is an evidence-based practice project. An education program based upon manufacturer guidelines for the most commonly prescribed antipsychotics at the project setting was developed and taught to medical staff. Data on the incidence of dystonic reactions was collected for 91weeks prior and 4 weeks after the staff education. Charts were was also collected to assess for provider compliance with the prescribing guidelines. The number of dystonic reactions averaged 1.09 per week prior to the intervention and 3 per week post intervention. Provider compliance with the prescribing guidelines was 95%. The project was limited by small sample size and short duration of data collection in the post implementation period. The data collection should be continued for an additional 87 weeks following the implementation phase to match the pre-implementation time frame and the results then reexamined.

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BACKGROUND

Dystonia is an involuntary motor syndrome that causes contractions of muscles (Knopf et al., 2021). Dystonic reactions are a source of great distress to patients and can lead to increased morbidity and mortality (Alkharboush & Alsalamah, 2020; American Medical Association, 2020; DiBonaventura et al., 2012). They also lead to medication non-adherence which contributes to higher utilization of health services, increased medical costs, and an increased burden on the healthcare system (American Medical Association, 2020; DiBonaventura et al., 2012; Oates et al., 2020). Antipsychotics are among the most reported causes of drug related dystonic reactions in children (Knopf et al., 2021). The prevalence of antipsychotic induced dystonic reactions in children can be as high as 90% with certain medications and the presence of other risk factors (Knopf et al., 2021; van Harten et al., 1999). While antipsychotics are generally FDA approved for psychosis, bipolar disorder and autism, they are used off label for sleep disorders, oppositional defiant disorder, ADHD and other conditions (Knopf et al., 2021). This further increases the likelihood for children to experience a dystonic reaction. The risk factors for dystonic reactions are known and include factors such as young age, rapid titration of medications, use of multiple medications amongst others (Tural Hesapcioglu et al, 2020; van Harten et al., 1999).

PURPOSE AND HYPOTHESIS

The purpose of this project is to determine if staff education and updated prescribing guidelines can reduce the incidence of dystonic reactions in children being prescribed antipsychotics on the psychiatric hospital unit.

METHODS

The project lead developed an evidence-based practice guideline for the safe administration of antipsychotics for the population served at the practice site. The practice guidelines recommend that providers consider using the manufacturer guidelines whenever available. The staff education was limited to the antipsychotics Abilify and Risperdal since these are the most commonly prescribed antipsychotics for children at the project site. The provider education was taught at a provider education session by the director of nurse practitioner education and the education highlighting FDA prescribing were provided to the providers. The guidelines were also distributed for future reference. The goal of the project was to reduce the rates of dystonic reactions in pediatric patients taking antipsychotics by 10% within a 4-week implementation frame. Data on the incidence of dystonic reactions was collected for 91weeks prior to the project implementation date and then 4 weeks after the staff education. In the post implementation period, charts were was also collected to assess for provider compliance with the prescribing guidelines.

RESULTS

The number of dystonic reactions averaged 1.09 per week in the 91 week period prior to the intervention and 3 per week in the 4 week post intervention period. Provider compliance with the prescribing guidelines was 95%. The goal of reducing the rates of dystonic reactions in pediatric patients taking antipsychotics by 10% within a 4-week implementation frame was not achieved.

CONCLUSIONS

The project will need to be continued in order to obtain statistically significant results. Data collection should be continued for another 87 weeks to match the pre-implementation time frame of 91 weeks for an accurate analysis of the prevalence of dystonic reactions. It is unlikely for there to be any relationship between adherence to manufacturer guidelines with the increase in dystonic reactions that occurred over the 4 week post-implementation period. The increased rate of dystonic reactions may have been due to provider non-adherence to the prescribing guidelines. Due to the small sample size of charts assessed for provider compliance, it is difficult to apply the 95% compliance rate seen in the sample to the entire medical staff. It may also be coincidental. Notably, the number of dystonic reactions over the 4 weeks were not evenly distributed. Week # 1 saw 1 dystonic reaction. Week # 2 saw 5 dystonic reactions.

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