Patterns of use of atypical antipsychotics in children and young adults

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BACKGROUND

- Atypical antipsychotics are used for treating a variety of mental health disorders such as schizophrenia, depression and bipolar disorder among many others. There is increasing concern about use of atypical antipsychotics in children due to their varying side-effects and lack of evidence to substantiate their efficacy in children[1].
- Recently, the FDA has approved the use of a few atypical antipsychotics or second generation antipsychotics (SGAs) for diseases such as schizophrenia and bipolar disorder in children and adolescents. However much of the use of SGAs in children and adolescents is still not supported by labeled indications or clinical evidence [2].
- There is limited evidence studying the effects of these drugs in children, but most existing studies point towards a range of potentially serious adverse events such as weight gain, diabetes, hypertension, metabolic and endocrine abnormalities, hyperprolactinemia, dyslipidemia in the short term and several other unknown long-term effects[3].
- In 2011, a Government Accountability Office (GAO) study examined the rates of psychotropic medication use among foster children in several states and recommended to the Department of Health and Human Services (DHHS) that they should provide guidance to states on best practices for overseeing psychiatric prescriptions.
- In response to this, the DHHS sent a letter to state directors of Medicaid, Mental Health and Human Services making them aware of the results of the GAO study and other studies that provide evidence towards the growing problem of safe, appropriate and effective use of psychiatric medications among foster children. They proposed an expansion of activities and collaboration between the Administration for Children and Families (ACF), The Center for Medicare and Medicaid Services (CMS) and the Substance Abuse and Mental Health Services Administration (SAMHSA). This includes expansion of online resources and webinars, development of quality measures to evaluate states, working with states to enhance Drug Utilization Review, building Health Homes, encouraging use of Health Information Technology and development of guidelines for the use of psychiatric medications in children and adolescents along with the American Academy of Child and Adolescent Psychiatry (AACAP).
- These changes hold the potential to significantly alter the SGA market[4].

OBJECTIVES

One problem with research in this area has been the difficulty of assessing appropriate use. This study examined the level of evidence available in medical claims to support atypical antipsychotic use in Mississippi Medicaid children and young adults.

METHODS

Data source:

A retrospective analysis was conducted using Mississippi Medicaid claims data from the time period January 2008 to December 2011. An integrated analysis was conducted using prescription claims, medical claims and the patient eligibility file. The patient eligibility file was used to collect demographic data and check for periods of eligibility.

Inclusion criteria:

Most analyses were conducted at the prescription level. Prescription claims were included in the study if they met the following criteria:

- Claim was for an atypical antipsychotic.
- Beneficiary was under 21 years of age on date prescriptions was filled.

Identified claims were checked for an appropriate diagnosis in the medical claims within 6 months before or 6 months after the date of dispensing. Prescription claims were classified as 'evidence of medical acceptability' based on the presence of a mental health diagnosis in the medical claims and a 'medically accepted use' being identified for the product, diagnosis, and patient of that age. In accordance with the CMS Manual System Medicare Benefit policy, a treatment was classified as 'medically accepted use' if its evidence of efficacy was a Class I, Class IIa, or Class IIb in Micromedex DrugDex. If any prescription taken by a beneficiary was classified as having evidence, all prescriptions for that product for that beneficiary were classified as having evidence.

Outcome variables:

Outcome variables were :

- percentage of prescriptions with evidence of medical acceptability
- total annual drug payments.

Annual costs were the sum of all claims identified in a particular year and were adjusted to the 2011 dollar value using Consumer Price Index for medical care services available from the Bureau of Labor Statistics.

RESULTS

- The study population included children and young adults under 21 years of age receiving atypical antipsychotic prescriptions. A total of 7,847 beneficiaries were identified, accounting for 107,544 SGA prescriptions. 67.6% of the study population was male. 31.9% were Caucasian, 44.7% were African-American. The average age of population was 11.8 years.
- On average, each beneficiary in the study filled 3.59 SGA prescriptions per year.
- Of the 7,487 beneficiaries in the study, 5,568 (74%) of them had at least one GSA prescription associated with a mental health diagnosis.
- Only claims associated with mental health diagnoses were included in the analysis of 'medically acceptable use.'

RESULTS

Evidence of medically acceptable use in claims:

- Of the total GSA prescriptions associated with diagnoses, 13,841 (52.9%) were found to be medically acceptable according to the evidence ratings listed in MicroMedex and the diagnoses observed in the medical claims.
- Risperidone and aripiprazole are the most used atypical antipsychotics
- When aripiprazole prescriptions were considered to not be medically acceptable based on claims data, it was most often due to the age of the patient or for use when associated with a non-indicated diagnosis such as depression.
- Similar patterns were seen in the case of risperidone, quetiapine and olanzapine.

Table 1: Number of Prescriptions Classified as Having Medically Acceptable Evidence For How Used by Drug

Drug	Total	Medically Acceptable Evidence	No Medically Acceptable Evidence	Percentage With Evidence
Aripiprazole	7,918	4,302	3,616	54.3%
Clozapine	474	79	395	16.7%
Olanzapine	2,008	659	1,349	32.8%
Paliperidone	329	0	329	0.0%
Quetiapine	3,987	2,215	1,772	55.6%
Risperidone	9,885	6,322	3,563	64.0%
Ziprasidone	1,563	264	1,299	16.9%

Medically Acceptable Evidence was defined as prescriptions associated with mental health diagnosis recognized as a medically acceptable use for a beneficiary of that age.

Table 2: Spending on atypical antipsychotics by year

Year	Medically Acceptable Evidence	No Medically Acceptable Evidence	Total
2008	$1,694,723	$1,515,360	3,210,083
2009	$1,231,838	$1,020,193	2,252,031
2010	$1,046,839	$1,047,719	2,094,558
2011	$667,825	$686,956	1,354,782

Medically Acceptable Evidence was defined as prescriptions associated with mental health diagnosis recognized as a medically acceptable use for a beneficiary of that age.

CONCLUSIONS

The results from this study offer an insight into the problems of conducting research on treatment of mental disorders in children. Some SGA prescriptions are not associated with mental health diagnoses in the medical claims. This may be due to several factors. Some prescribers are reluctant to 'label' a child with a mental health diagnosis in claims. There is also the problem of how frequently a diagnosis is actually coded on a subsequent medical claims after a diagnosis has been coded once. The lack of diagnoses appearing in medical claims near the time prescriptions are filled is a significant limitation when trying to examine the 'appropriateness' of SGA use.

When SGA prescriptions can be associated with mental health diagnoses, they are often associated with diagnoses that are not listed in FDA approved labeling, but are diagnoses considered to be medically acceptable uses. This is further complicated by the fact that few, if any, SGAs have any labeled indications for children under 16 or 18 years of age. Most, if not all, treatment of children with antipsychotics is for indications not covered by FDA approved labeling.

During the time period examined by this study, all SGAs were subject to age edits and prior authorization was required with providers documenting medical necessity and waiving the age limit for use of the medication prescribed. Therefore, evidence of medically acceptable use was gathered manually through the prior authorization processing but this information is not included as part of the administrative claims data.

In conclusion, it appears that some antipsychotic use in this population may not be supported by evidence in the medical claims. The lack of supporting diagnoses in medical claims is a significant limitation when examining the appropriateness of use of antipsychotics among children.

REFERENCES

1. Malone R, Sheikh R, Zito J. Novel antipsychotic medications in the treatment of children and adolescents. *Psychiatr Serv.* 1999;50(2): 171-174.
2. Staller JA, Wade MJ, Baker M. Current prescribing patterns in outpatient child and adolescent psychiatric practice in New York. *J Child Adolesc psychopharmacol.* 2005; 15:57-61.
3. Vitiello B, Correll C, van Zwieten-Boot B *et al.* Antipsychotics in children and adolescents: Increasing use, evidence for efficacy and safety concerns. *Eur. Neuropsychopharmacol.* 2009.04.008.
4. Department of Health and Human Services, Letter to State Director. Washington DC: 20201.
5. Kutz GD. Foster children: HHS guidance could help states improve oversight of psychotropic prescriptions. Washington DC: General Accounting Office Report GAO – 12- 270T.

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