Reviewer’s report

Title: Improved drug safety through intensive pharmacovigilance in hospitalized pediatric patients

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Reviewer: Jiraganya Bhongsatiern

Reviewer's report:

This article analyzed adverse drug reactions (ADRs) in pediatric service of a regional teaching hospital in Mexico. The pediatric service excluded those at Departments of Emergency, Intensive Care, and Oncology. Intensive pharmacovigilance (IPV) was applied in this study. IPV is a method that consists of systematically obtaining complete, quality information on suspected adverse medicine reactions to determine frequency of adverse reactions, identification of predisposing factors, and patterns of medicine use.

Strengths of this article include (1) the prospective 6-month cross-sectional study design performed in pediatric patients from 1 day to 18 years old; (2) the assessment of ADRs was conducted using widely acceptable algorithm and scales: Naranjo algorithm, Schumock & Thornton, and Hartwig and Siegel; and (3) interesting results with regard to significant relationship between antibiotics prescription and incidence of ADRs in the study hospital.

However, there are weaknesses that are critical and need to be improved before this manuscript can be accepted for publication. Some grammatical errors were found. For example, page 6 (last paragraph), "In order to evaluate the severity of the ADRs …and to determine the predictability of the incident, the Schumock and Thornton questionnaire." is not a sentence. Approximately 10 out of 40 references are not written in English. Although English abstracts are provided for some references, it was challenging to understand some part of the results using the non-English references provided.

My primary concerns are for Table 1-4. They inadequately demonstrated the results as described in my following comments:

1. Although it is acceptable to include 'Diagnostic Group' in the demographics table (Table 1.), it might be easier to understand if the author can regroup them according to pharmacological group or the reported organ systems affected due to ADRs in Table 3.
2. The 'Total' column in Table 1 shows confusing results. Certainly, the total of 1083 is a sum of males and females of both age groups. However, 4.3, 16.8, and 9 represent the mean of variables age, weight, and hospital stay, respectively, not total or sum. Also, why were there only +SD for the mean of the number of days of the hospital stay in Table 1, 2, and 4?

3. There was no information of why the authors chose to divide the pediatric population into two groups with the cutoff at 1 year old. A discussion with regard to immature immune system in the age group of <1 year old that could result in increased susceptibility for diseases was mentioned on Page 14. Nonetheless, developmental changes in drug metabolism and excretion in the age range of 1-2 years old may be worth described.

4. On page 14; 2nd paragraph (Discussion section) "…in our study we observed 79% of ADRs in this age group", was this referred to the age group of 1-10 years old or 1-18 years old? If 1-18 years old, can the authors discuss why there are differences between the authors' results (79% of ADRs) and that from Aagaard et al (>40% of ADRs)? Also, line 32 (same paragraph on page 14), should the susceptibility for diseases of the respiratory system be referred to the results in Table 1, not Table 2?

5. Similar to the 'Total' column in Table 1, the 'General' column in Table 2 is confusing. The first 4 rows (variables: age, number, concomitant medications, and hospital stays) are already demonstrated in Table 4 (first 4 rows). This should be reorganized. In addition, on page 9 line 12, the mean age of pediatric patients with ADRs was 7.2 (+/-) 5.9 years. This number looks the same as that of the mean age of pediatric patients without ADRs in Table 4. This should either belong to with or without ADRs group but not both.

6. Can the authors please include the results of the relationship between the occurrence of ADRs and the fourth and the fifth day of antibiotics prescription? From the Results section on page 10 (and abstract), the authors mentioned the significant difference was observed on the third day of prescription. However, Table 4 shows 46.5 (+/-) 36.5 out of 18 pediatric patients with ADRs that had at least (≥) 3 days of antibiotics administration. In my opinion, this does not indicate the significant results on the third day of antibiotics use and the number of patients are confusing.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

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