PERFORMANCE OF TRIGGERS TOOLS IN THE ACTIVE SEARCHING FOR ADVERSE DRUG REACTIONS AT A FEDERAL INSTITUTE IN RIO DE JANEIRO

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Introduction

An adverse drug reaction (ADR) is characterized as "any harmful or undesirable, unintentional response to a medication, which occurs at doses usually used in humans for prophylaxis, diagnosis, therapy of the disease or for the modification of physiological functions". The occurrence of ADRs, in addition to causing harm to patients, causes economic consequences due to additional treatment costs, increased length of stay, need for other procedures and/or exams to reverse the damage caused[1]. The active search method in pharmacovigilance allows greater efficiency in identifying adverse drug events (ADE). The "Global Trigger Tool" or "trackers" method stands out[2]. However, to capture ADRs, the quality and availability of information contained in medical records is necessary, as well as the establishment of effective trackers that present high performance considering the profile of the institution[3]. Therefore, it is essential to evaluate the performance of the listed trackers with a view to prioritizing those that performed better in detecting adverse drug events in relation to their application in the service's routine.

Material and Methods

This is a retrospective descriptive study conducted at the National Institute of Traumatology and Orthopedics Jamil Haddad (INTO). For data collection, information contained in the database of the sector responsible for the hospital's pharmacovigilance activity was used, between the years of 2019 to 2022. The trackers were identified, and their performance was evaluated using the model proposed by Giordani *et al.*[4] e Rozenfeld *et al.*[3], using three components. The first component calculated by dividing the number of times a trigger was identified by the total number of patients evaluated, multiplied by 100 (1); the second, dividing the number of suspected adverse drug events identified by the trackers by the total number of patients evaluated, multiplied by 100 (2); the third was calculated by dividing (2) by (1), multiplied by 100. In this way, the trackers were grouped into performance categories based on the average yield value and classified as "high performance", with a yield of 100%; "medium performance", between 50% and 99.9%; and those with "low performance", < 50%. The present study is part of the research project entitled "Assessment of causality algorithms for adverse drug reactions" approved by the Research Ethics Committee of the Universidade Federal Fluminense (CAAE 64881922.1.1001.5243) and by INTO (CAAE 64881922.1 .2001.5273).

Results and Discussion

Between 2019 to 2022, 721 triggers were identified, which made it possible to detect 295 adverse drug reactions. In the total population (294 medical records) there was a mean of 2.53 (standard deviation = 0.91) and a median of 2. The number of adverse drug events identified per medical record varied from 0 to 6, with 54,4 % of them had between 1 and 2 trackers per medical record.

The most frequently identified triggers in medical records were vancomycin (43.5/100 patients); loratadine (42.2/100 patients); prednisone (25.2/100 patients) and daptomycin (23.1/100 patients), which

despite being easier to find in medical records, also imply a high workload applied in the analysis process. The triggers: vancomycin, loratadine, dexchlorpheniramine and prednisone were those most frequently used to identify suspected adverse drug events. Antimicrobials were involved in 38.3% of adverse drug reactions. This data corroborates the studies by Ramos *et al*.[5] e Andrade *et al*.[6] which deal with the frequent development of adverse drug reactions related to antimicrobials.

A total of twenty-seven triggers were not identified in the medical records, among them, thirteen belonging to the list of laboratory parameters, two anti-allergic/antidotes and twelve related to the list of defined medications. Of the 61 triggers defined at the institution, thirty-four triggers did not identify any adverse drug events. It is important to highlight that these trackers may have superior performance in larger samples, as discussed by Silva *et al.*[7]

Regarding the performance of trackers, we can identify three categories, high, medium, and low performance. Three trackers showed high performance, that is, they were not necessarily the most frequently found in medical records, but in 100% of the cases in which they appeared, they signaled the occurrence of a possible ADR. Eight trackers were classified in the category of trackers with medium performance and the remaining trackers included in the low performance category (< 50%).

In this case, a careful evaluation must be carried out when applying trackers with lower performance as this decision can lead to a high work demand, making the methodology unfeasible. It should also be considered that the process of investigating ADE in medical records requires detailed analysis and evaluation of each case.

Conclusion

The performance analysis results of the trackers demonstrated their usefulness in monitoring adverse reactions to medications, considering the institution's profile. However, it suggests the need for adjustments to prioritize trackers that present better performance, an essential strategy to reduce time and human resources, in addition to preventing compromising the efficiency of the method.

In this sense, constant review and improvement of these tools are essential to ensure the detection and management of ADRs, which contributes to the continuous improvement of healthcare, as they play a crucial role in promoting patient safety.

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