

A Decision Support Alert for Promoting Prophylactic Laxative Use with Clozapine

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Abstract. We investigated the effectiveness of a decision support alert to improve prophylactic laxative use with clozapine in hospital. Prescribing data for first clozapine and laxative prescriptions were extracted and linked. Proportions of first clozapine prescriptions for which a laxative was co-prescribed within 24 hours was compared before and after alert implementation. The alert was associated with increased and earlier laxative co-prescribing.

Keywords. Decision support alerts, medication safety, prescribing behavior

1. Introduction

Clozapine treatment is often associated with unwanted gastrointestinal hypomotility and constipation [1]. Unmanaged, these effects can rapidly progress to sometimes fatal gastrointestinal complications. Prophylactic use of laxatives is recommended by experts for clozapine, but not done consistently [2]. Point-of-care clinical decision support (CDS) alerts are common in electronic prescribing systems to aid decision making around medicine use [3]. Whether implementing such an alert would improve prophylactic laxative prescribing with clozapine remains unknown.

2. Methods

In September 2019 an alert was introduced at our local institution that prompted prescribing of a laxative for clozapine prescriptions written for adult inpatients. First clozapine and laxative prescriptions for each inpatient admission were extracted from the local data warehouse before (01/01/2017-08/09/2019) and after (09/09/2019-31/12/2023) alert implementation and linked in R software. The primary outcome was the proportion of first clozapine prescriptions where a laxative was co-prescribed within 24 hours. This outcome was compared before and after the alert as proportions using chi squared tests with significance set at $p < 0.05$.

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3. Results

A total of 519 and 834 first clozapine prescriptions were extracted before and after alert implementation for a total of 515 patients. Co-prescribing of laxative within 24 hours of the first clozapine prescription increased from 83.2% (432/519) to 94.2% (786/834) after the implementation of the alert ($p < 0.001$). Where laxatives were co-prescribed after clozapine, they were initiated within 15 minutes of clozapine prescribing in 29% of cases before the alert implementation, increasing to 44% post-alert implementation (Figure 1).

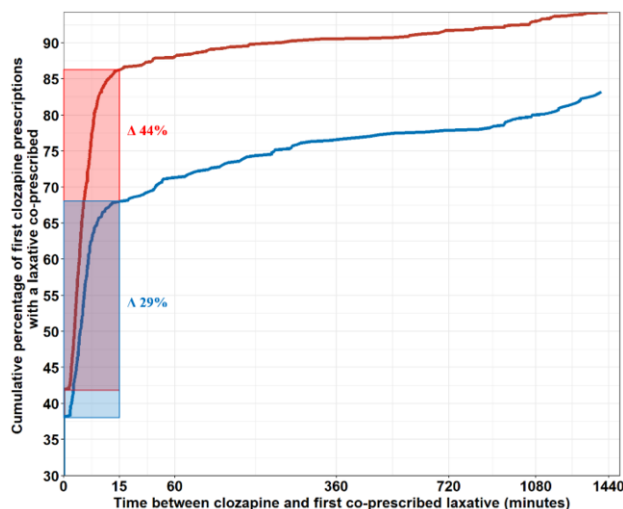


Figure 1: Cumulative number of first clozapine prescriptions with a laxative co-prescribed within 24 hours. Blue = pre-alert, red = post-alert. Boxes highlight the cumulative number of first clozapine prescriptions that had a laxative co-prescribed within 15 minutes.

4. Discussion and Conclusions

This study is the first to examine the effectiveness of a CDS alert for promoting prophylactic laxative prescribing with clozapine. Implementation of the alert was associated with earlier laxative prescribing and improved laxative co-prescribing within 24 hours of clozapine. These findings alongside the relative ease and minimal costs of alert implementation supports adoption of this alert in other electronic prescribing systems. However, alerts can be overridden/ignored by prescribers (e.g., laxative use is contraindicated). Understanding reasons for alert non-adherence requires further work.

References

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