

Drug shortage in Saudi Arabia was mostly common in drugs that are more expensive outside Saudi Arabia: A retrospective database analysis

Turki Althunian¹, Mohammad A. Alowairdhi¹, Fatimah H. Alhussain¹, Maha I. Alomran¹, Ohoud A. Almadani¹, Norah A. Alkhamash¹, Shayma F. Alyabes¹, Sultan A. Alharbi¹, Esraa A. Almudaiheem¹, Reem A. Alhaider¹, Sara A. Alhassan¹, Zainab A. Almuallem¹, Nuha Algain¹, Abdulaziz O. Alshehri¹, and Thamir Alshammari²

¹Saudi Food and Drug Authority

²Riyadh Elm University

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Abstract

Purpose: Studies suggested that drug pricing might be a risk factor for drug shortage; however, a few provided a quantitative assessment of this possible causal association. This study aimed to assess whether drug prices are associated with drug shortage incidents. **Methods:** This was a retrospective database analysis study. Drugs with shortage notifications (one drug per notification) that were sent to the Saudi Food and Drug Authority (SFDA) from Jan/2017 to Dec/2020 by different stakeholders were included in the study. For each drug, the foreign-to-Saudi-price ratio (FTSPR) was calculated (FTSPR = mean international price/Saudi price). Accordingly, drugs were split into three groups: Group 1 (FTSPR >1]), Group 2 (FTSPR =1]), and Group 3 (FTSPR <1]). The primary outcomes were the ratio of mean counts (mCR) between the three groups with Group 3 chosen as a control group. The study outcomes were analyzed using a negative binomial regression model adjusting for the measured confounders. All study analyses were conducted using RSudio Version 1.2.5033. **Results:** A total of 900 drugs were included (Group 1=348, Group 2=345, Group 3=209). The mean count of Group 1 higher was higher than Group 3 (mCR: 1.88; 95% confidence interval [CI] 1.24 to 2.83), while and mean counts of Group 2 vs. Group 3 were comparable (mCR: 1.39; 95%CI 0.92 to 2.09). **Conclusions:** The results of our study showed that shortage was associated with drugs that are more expensive outside Saudi Arabia. Additional international studies are needed to explore this causal association.

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Figure 1. The most commonly reported therapeutic classes with shortage

