DSEN ABSTRACT

Angiotensin receptor blocker use in the US, UK, Canada, and Denmark after the nitrosamine recalls of 2018

A study conducted by the Canadian Network for Observational Drug Effect Studies (CNODES)

Summary

- In Canada, an immediate steep decline in valsartan use was observed after the July 2018 recall accompanied by increased switching to other ARB products.
- Subsequent recalls for losartan and irbesartan also were associated with increased switching, but overall trends in use remained unchanged.

Key messages

- Despite availability of uncontaminated ARB products at the time of the recall, findings show that the immediate response was to switch patients to another ARB.

Project Lead & Team

- Michael Paterson, MSc and Robert Platt, PhD
- Team members available here

Link to publication

- Eworuke et al. BMJ Open. 2023. doi: 10.1136/bmjopen-2022-070985.

What is the issue?

- In July 2018, drug regulatory agencies issued recalls of the angiotensin receptor blocker (ARB), valsartan, due to the presence of nitrosamine impurities.
- Subsequent recalls were issued for losartan and irbesartan products.
- As the risk of cancer associated with the nitrosamine impurities was determined to be low, patients were advised to continue treatment until an alternative treatment option became available.
- The impact of the ARB recalls on drug utilization is not well understood.

What was the aim of the study?

- To examine the utilization of valsartan, losartan, and irbesartan in 4 countries before and after the recall of valsartan in July 2018.

How was the study conducted?

- In collaboration with the Food and Drug Administration (FDA), this retrospective cohort study was conducted using data from 4 countries: the US (FDA's Sentinel System), UK (Clinical Practice Research Datalink), Canada (CNODES), and Denmark (Danish National Prescription Registry).
- The study cohorts included patients aged 18 years and older who received a prescription for an ARB (azilsartan, candesartan, eprosartan, irbesartan, losartan, olmesartan, telmisartan, valsartan) between January 2014 and December 2020.
- Patterns of use and switching among ARBs and to angiotensin-converting enzyme inhibitors or calcium channel blockers were described.
- Interrupted time series analyses were conducted to examine the impact of the recalls on the use of each ARB.

What did the study find?

- During the study period, 10.8, 3.2, 1.8, and 1.2 million ARB users were identified in the US, UK, Canada, and Denmark, respectively.
- Valsartan, losartan, and irbesartan comprised the following percentages of ARB use.
    - US: 18.4%, 67.9%, and 5.2%, respectively
    - UK: 3.1%, 48.3%, and 10.2%, respectively
    - Canada: 16.3%, 11.4%, and 18.3%, respectively
    - Denmark: 1.0%, 93.5%, and 0.6%, respectively.
- A substantial decline in valsartan use was observed after July 2018 in the US and Canada accompanied by increased switching to other ARBs. Minimal decline was observed in Denmark and the UK.
- Subsequent recalls for losartan and irbesartan also were associated with increased switching, though lower compared to valsartan switches. Overall trends in use remained unchanged.

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CIHR IRSC Canadian Institutes of Health Research / Instituts de recherche en santé du Canada

CNODES CANADIAN NETWORK FOR OBSERVATIONAL DRUG EFFECT STUDIES

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