Effect of Selumetinib Treatment on Pain Medication Utilization in Pediatric Patients: A US Claims Database Analysis

Authors: Genevieve Lyons,[1] Julia Meade,[2] Theresa Dettling,[1] Michelle Erdmann,[3] Benjamin Guikema,[1] Ayo Adeyemi[1]

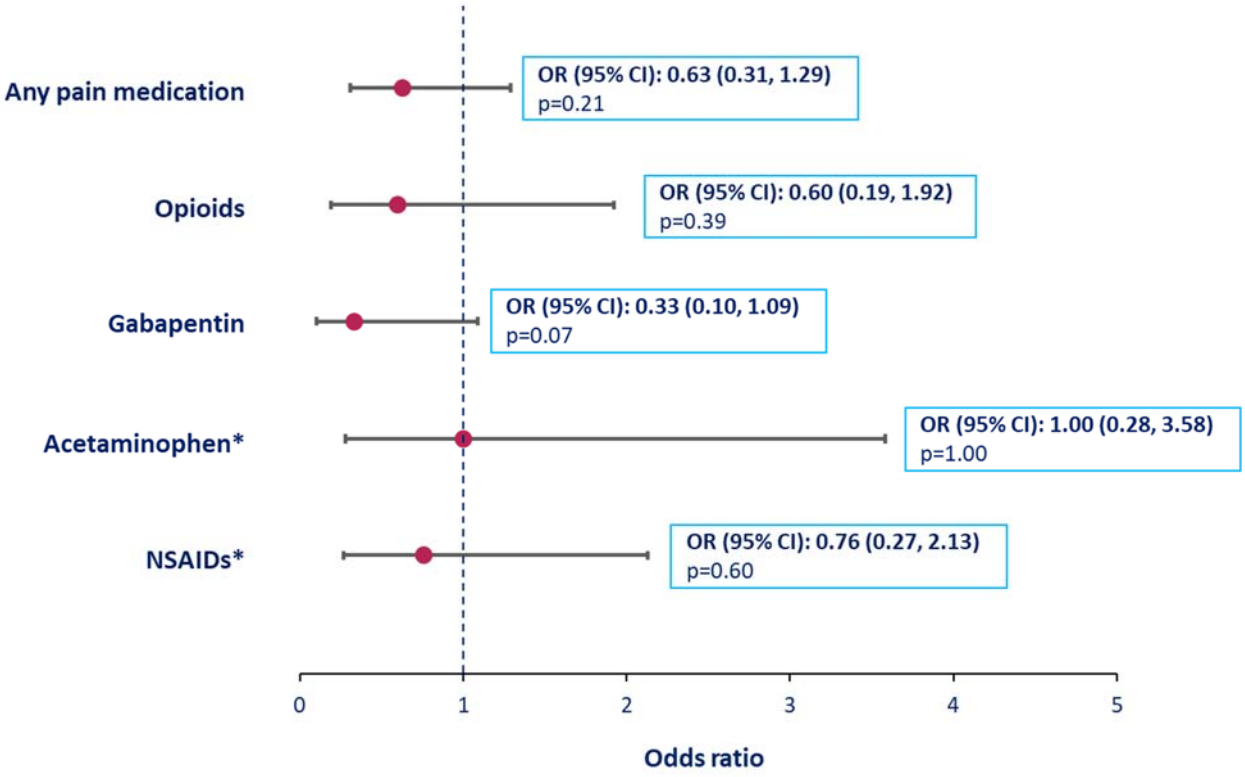
Affiliations: [1]Alexion Pharmaceuticals, Inc., Boston, MA, USA; [2]Division of Pediatric Hematology/Oncology, University of Pittsburgh School of Medicine, Pittsburgh, PA, USA; [3]Alexion Pharmaceuticals, Inc., Mississauga, ON, Canada

Poster code: RWD6

Supplementary Methods

- The generalized estimating equation (GEE) model was used to account for the multiple repeated measures for each individual patient (i.e. pre- and post-index) to estimate the change in pain medication utilization (PMU), while also accounting for the pairs of correlated observations (i.e. each patient having a pre- and post-index PMU)
- GEE was adjusted for sex, age, and Charlson Comorbidity Index
- Changes in any PMU were analyzed, and a sub-analysis was conducted for the individual types of PMU (opioids, gabapentin, prescription acetaminophen, prescription non-steroidal anti-inflammatory drugs)
- Patients with ≥80% proportion of days covered (days covered ÷ days in time frame) were considered adherent

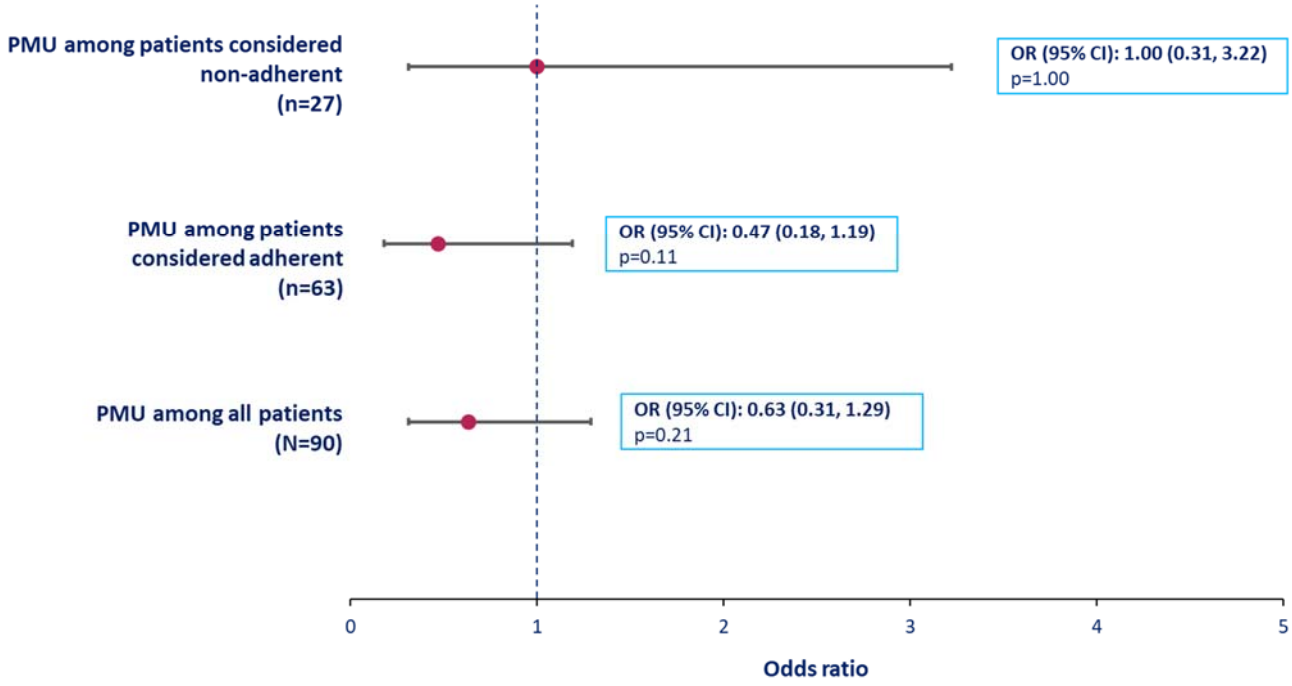
Supplementary Figure 1: Unadjusted odds ratios for PMU in the primary cohort pre- and post-index (N=90)



*Prescription only. ORs less than 1 represented a decrease in PMU post-index/first selumetinib prescription claim.

CI, confidence interval; NSAID, non-steroidal anti-inflammatory drug; OR, odds ratio; PMU, pain medication utilization.

Supplementary Figure 2: Unadjusted odds ratios for PMU in the primary cohort pre- and post-index, stratified by adherence (N=90)



Patients with ≥80% proportion of days covered (days covered ÷ days in time frame) were considered adherent. ORs less than 1 represented a decrease in PMU post-index/first selumetinib prescription claim.

CI, confidence interval; OR, odds ratio; PMU, pain medication utilization.

Supplementary References

1. Alexion. Koselugo (selumetinib) Prescribing Information. 2024; 2. FDA. FDA approves selumetinib for neurofibromatosis type 1 with symptomatic, inoperable plexiform neurofibromas. https://www.fda.gov/drugs/resources-information-approved-drugs/fda-approves-selumetinib-neurofibromatosis-type-1-symptomatic-inoperable-plexiform-neurofibromas (accessed April 2024); 3. AstraZeneca. Koselugo approved in the EU for children with neurofibromatosis type 1 and plexiform neurofibromas. https://www.astrazeneca.com/media-centre/press-releases/2021/koselugo-approved-in-the-eu-for-children-with-neurofibromatosis-type-1-and-plexiform-neurofibromas.html# (accessed April 2024); 4. AstraZeneca. Koselugo approved in Japan for paediatric patients with plexiform neurofibromas in neurofibromatosis type 1. https://www.astrazeneca.com/media-centre/press-releases/2022/koselugo-approved-in-japan-for-paediatric-patients-with-plexiform-neurofibromas.html# (accessed April 2024); 5. AstraZeneca. Koselugo approved in China for paediatric patients with neurofibromatosis type 1 and plexiform neurofibromas. https://www.astrazeneca.com/media-centre/press-releases/2023/koselugo-approved-in-china-for-paediatric-patients-with-neurofibromatosis-type-1-and-plexiform-neurofibromas.html (accessed April 2024); 6. Bergqvist C et al. *Orphanet J Rare Dis* 2020;15:37; 7. Blakeley JO and Plotkin SR. *Neuro Oncol* 2016;18(5):624-638; 8. Iheanacho I et al. *Neurol Sci* 2022;43:1281–1293; 9. Wolters PL et al. *Am J Med Genet A* 2015;167A:2103–2113.