



Assessing The Analgesic Efficiency of Suzetrigine (VX-548) in Pain Management and its Potential in Dentistry: A Narrative Literature Review

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ABSTRACT

In 2012 dentists ranked second behind family practitioners as the leading prescribers of opioids in the U.S., new research is showing promise to new alternative non-opioid pain management drugs. Suzetrigine is a selective Nav1.8 inhibitor developed by Vertex pharmacological profile of Suzetrigine, a new non-opioid analgesic, in the treatment of both acute and chronic pain. It is a voltage-gated sodium channel blocker involved in pain transmission in the peripheral nervous system. In the past, opioids such as hydrocodone was the standard analgesic in pain management. However, those opioids have an addictive. The aim of this study was to summarize the literature on the efficacy, safety and pharmacological profile of Suzetrigine, a new non-opioid analgesic, in the treatment of acute and chronic pain.

MATERIALS AND METHODS

Study Design

- Phase 2, randomized, double-blind, placebo controlled trials conducted across multiple clinic centers
- Parallel group design comparing Suzetrigine to placebo and in some cases pregabalin as an active comparator
- Blinding was maintained by ensuring neither participants or investigators knew treatment allocations

Patient Population:

- LSR study. Included 218 adults aged 18-80 with diagnosed painful lumbosacral radiculopathy persisting for at least six months
- DPN Study. Included adults with painful diabetic peripheral neuropathy diagnosed for at least one year
- Exclusion criteria included prior use of Nav1.8 inhibitors, unstable comorbidities or recent opioid dependency

Treatment Arms:

LSR Study

- Suzetrigine 50 mg once daily
- Placebo comparator

DPN Study:

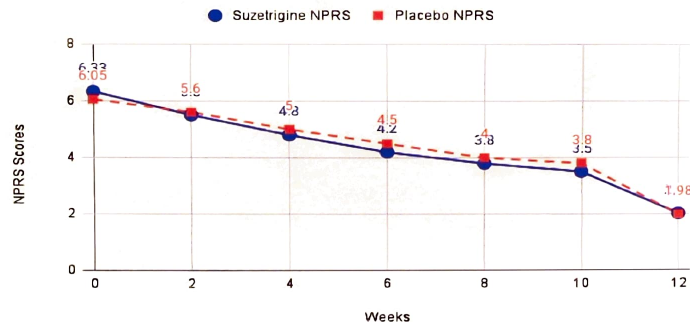
- Suzetrigine at three doses 23 mg, 46 mg, or 69 mg once daily
- Comparator: pregabalin 100 mg three times a day

Among 12 studies reviewed, Suzetrigine demonstrated significant pain reduction for DPN (greater than or equal to 50%) in more than 30% of patients, all dose groups compared to placebo and pregabalin in both acute and chronic pain models, over a 12 week period. The high dose group had -2.26 NPRS reduction, while it was -2.09 for pregabalin.

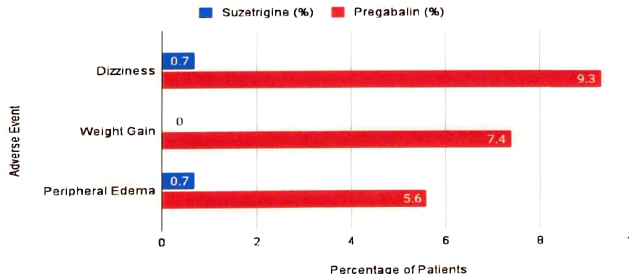
For the LSR study, the mean NPRS reduction was -2.02 in the Suzetrigine group versus -1.99 in the placebo group. The drug was well tolerated with minimal adverse effects, such as dizziness, weight gain and peripheral edema, which were transient and resolved upon discontinuation. No serious adverse events related to Suzetrigine. More clinical trials directly comparing the efficacy of VX-548 to the standard care post surgical drugs like morphine and hydrocodone are needed to study the long term side effects

RESULTS

NPRS Score Reduction Over Time



Adverse Events Comparison: Suzetrigine vs. Pregabalin.



CONCLUSION

Suzetrigine appears to be a promising non-opioid alternative for pain management providing effective analgesia without the common risks associated with opioid use, such as addiction and respiratory complications. Phase 3 trials are planned for Lumbosacral Radiculopathy and Diabetic Painful Neuropathy. Further studies are needed to explore its long term safety and efficacy in diverse pain conditions. Although promising, future clinical trials in dental pain management are needed to solidify its use in the field.

FUTURE WORK IN DENTISTRY

After extensive literature review, no research has been viewed for its impact on dental pain. Studies are needed to determine if it is more effective than the standard of care and to test the efficacy of VX_548 for the following invasive dental procedures:

- Endodontics
- Potential for use in root canal treatments and oral surgeries to minimize opioid dependency

Periodontal Application

- Exploring its efficacy in managing pain from periodontal disease and gum surgeries

Orthodontic Pain Reduction

- Exploring its effectiveness in alleviating discomfort associated with orthodontic movement of teeth and other treatments

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ACKNOWLEDGEMENTS

This study was part of a larger project funded by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS), with a total award of \$16,380,000 and 0% financed by non-governmental sources. The contents are the authors' responsibility and do not necessarily represent the official views of, nor an endorsement by, HRSA, HHS, or the U.S. Government. For more information, please visit HRSA.gov.