EXPERIMENTAL DRUG LOWERS SERUM PHOSPHATE CONCENTRATIONS IN PHASE 3 TRIAL OF HEMODIALYSIS PATIENTS

Tenapanor blocks intestinal phosphate absorption.

Highlights
- In a phase 3 clinical trial, tenapanor significantly lowered elevated blood phosphate in patients receiving maintenance hemodialysis, resulting in an average reduction of 1.0–1.2 mg/dL over 8 weeks.
- Side effects were largely limited to softening of stool and more frequent bowel movements.

Washington, DC (March 7, 2019) — An investigational drug that blocks intestinal phosphate absorption may help reduce the dangerously high blood levels of phosphate commonly seen in patients with kidney failure. The findings appear in an upcoming issue of the *Journal of the American Society of Nephrology* (*JASN*).

Patients with kidney failure who are receiving dialysis often have elevated levels of phosphate in their blood, which can contribute to cardiovascular and bone disease. Strategies used to reduce serum phosphate are currently limited to taking phosphate binder medications and reducing dietary phosphate intake.

An investigational drug called tenapanor reduces intestinal phosphate absorption by inhibiting a transporter protein called the sodium/hydrogen exchanger 3. To test the drug’s potential for lowering serum phosphate in patients receiving maintenance hemodialysis, Glenn M. Chertow, MD, MPH (Stanford University School of Medicine) and his colleagues conducted a phase 3 randomized, double-blind trial.

The investigators randomly assigned patients with high serum phosphate who were receiving maintenance hemodialysis to receive twice-daily oral tenapanor (3 mg, 10 mg, or 30 mg [the latter down-titrated, if needed]) for 8 weeks. Patients were then re-randomized 1:1 to receive either their previously assigned dose or placebo for a 4-week “withdrawal” period. The researchers assessed the average change in serum phosphate over the 4-week withdrawal period for the tenapanor group versus the placebo group.
Of 219 patients randomized, 152 completed both study phases. During the initial 8-week treatment period, all 3 treatment groups experienced significant decreases in average serum phosphate (reductions of 1.00 mg/dL, 1.02 mg/DL, and 1.19 mg/dL, corresponding to the 3 mg, 10 mg, or 30 mg dose groups, respectively). Tenapanor also showed a significant benefit over placebo during the withdrawal period, with an average increase of 0.85 mg/dL in patients taking placebo versus an average increase of 0.02 mg/dL in patients taking tenapanor. Side events associated with tenapanor were largely limited to softened stool and a modest increase in bowel movement frequency, resulting from increased stool sodium and water content.

“I am extremely excited about the therapeutic potential of tenapanor in patients with advanced chronic kidney disease. Tenapanor is not a phosphate binder, but rather, a novel agent that inhibits the intestinal absorption of phosphorus,” said Dr. Chertow. “I am eagerly looking forward to results of the second, ongoing phase 3 (“PHREEDOM”) trial in patients receiving hemodialysis with hyperphosphatemia and additional studies using tenapanor in conjunction with phosphate binders.”

Study co-authors include Geoffrey Block, David Rosenbaum, and Andrew Yan.

Disclosures: Dr. Chertow has received consulting fees and owns stock in Ardelyx.


The content of this article does not reflect the views or opinions of The American Society of Nephrology (ASN). Responsibility for the information and views expressed therein lies entirely with the author(s). ASN does not offer medical advice. All content in ASN publications is for informational purposes only, and is not intended to cover all possible uses, directions, precautions, drug interactions, or adverse effects. This content should not be used during a medical emergency or for the diagnosis or treatment of any medical condition. Please consult your doctor or other qualified health care provider if you have any questions about a medical condition, or before taking any drug, changing your diet or commencing or discontinuing any course of treatment. Do not ignore or delay obtaining professional medical advice because of information accessed through ASN. Call 911 or your doctor for all medical emergencies.

Since 1966, ASN has been leading the fight to prevent, treat, and cure kidney diseases throughout the world by educating health professionals and scientists, advancing research and innovation, communicating new knowledge, and advocating for the highest quality care for patients. ASN has more than 20,000 members representing 131 countries. For more information, please visit www.asn-online.org or contact the society at 202-640-4660.

# # #

Tweet: Experimental drug lowers phosphate levels in phase 3 trial of hemodialysis patients.
Facebook: An investigational drug that blocks phosphate absorption from the intestines may help reduce the dangerously high blood levels of phosphate commonly seen in patients with kidney failure. The findings appear in the *Journal of the American Society of Nephrology* (JASN).

Note: Send embargo info to: SWheeler@wheelhouselsa.com