Recommend,

CITRAPHOS™

Ferric Citrate Tablets equivalent to Elemental Iron 210 mg

Background:

- Hyperphosphatemia is associated with significant pathophysiology in chronic kidney disease (CKD). Observational studies have determined hyperphosphatemia to be a cardiovascular risk factor in chronic kidney disease.
- This pathophysiology contributes to the high rates of mortality observed in CKD. Regulation of phosphorus excretion by the kidney is the key mechanism of maintaining phosphate balance in normal day to day life.
- Kidney injury impairs the ability of mammals to maintain phosphorus balance, and in human chronic kidney disease, phosphorus homeostasis is lost and positive phosphate balance occurs in the later stages (4 and 5) of kidney diseases.

Description:

- **CITRAPHOS**™ contains Ferric Citrate, is an oral, absorbable, iron-based phosphate binder. It helps lower the amount of phosphate in blood. It is used to control of serum phosphorous levels in patients with chronic kidney disease (CKD) on dialysis.

Composition:

CITRAPHOS™ contains Ferric Citrate Tablets equivalent to elemental iron 210 mg.

Indication:

CITRAPHOS™ is a phosphate binder indicated for the control of serum phosphorus levels in patients with chronic kidney disease.

Mechanism of Action:

- Ferric iron binds dietary phosphate in the GI tract and precipitates as ferric phosphate.
- This compound is insoluble and is excreted in the stool.
- By binding phosphate in the GI tract and decreasing absorption, ferric citrate lowers the phosphate concentration in the serum.

Advantages:

- **CITRAPHOS**™ is an efficacious and safe phosphate binder
- It increases iron stores and reduces intravenous iron
- It also acts as an erythropoietin-stimulating agent while maintaining hemoglobin

Dosage:

The recommended starting dose is 2 tablets orally 3 times per day with meals.

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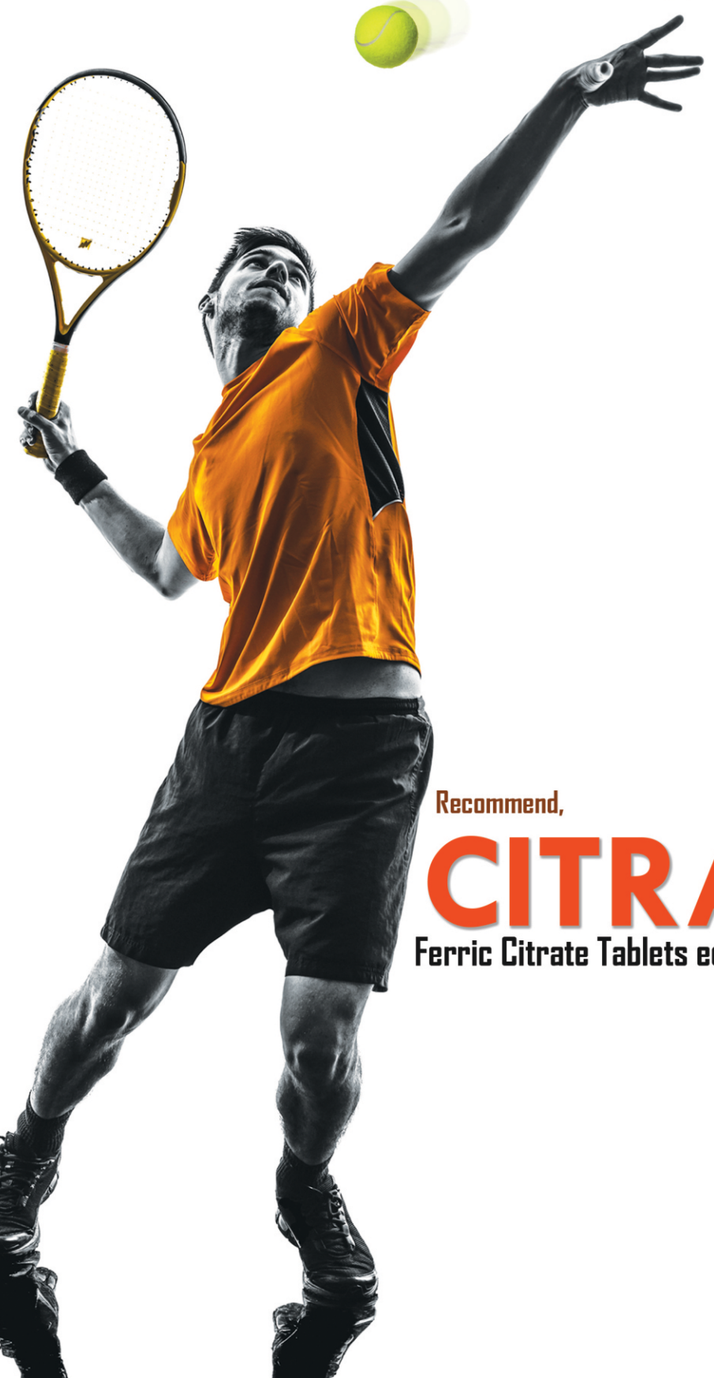
I am: _____
Call me on: _____
Mail me at: _____

For the Double Trouble



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La Renon®

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Introduction:

- Phosphate excess is associated with increased mortality in patients with chronic kidney disease (CKD) and has recently been linked to accelerated aging.
- Oral phosphate binders are prescribed to patients with CKD to prevent absorption of dietary phosphate.
- Currently available binders have been associated with impaired outcomes (calcium-based binders) or are expensive (non-calcium-based binders).
- Iron based phosphate binders represent a new class of phosphate binders.

Comparison between Ferric Citrate and Calcium Acetate:

Criteria	Ferric Citrate	Calcium Acetate
Efficacy	Ferric citrate decreased mean serum phosphorus from 5.1 mg/dL at week 52 to 4.9 mg/dL at week 56 (end of efficacy period) compared with 5.4 mg/dL at week 52 to 7.2 mg/dL at week 56 with placebo treatment.	Overall, 2 weeks of treatment with calcium acetate statistically significantly decreased serum phosphorus by a mean of 19% and increased serum calcium by a statistically significant but clinically unimportant mean of 7%.
Phosphate Binding capacity	The phosphorus-binding capacity of ferric citrate was estimated to be approximately 84.8 to 87.9 mg of phosphorus per gram of elemental ferric iron and 19.1 to 19.8 mg of phosphorus per gram of ferric citrate.	1mg of Phosphorous bound with 2.9 mg of Ca absorbed (estimated Ca absorbed : 21% with meal and 40% between meals)
Dose	The initial starting dose is 420 mg (as ferric iron [i.e., 2 tablets])TID with meals. Monitor serum phosphorus levels and adjust dose at ≥1-week intervals in decrements or increments of 1 to 2 tablets/dayto maintain serum phosphorus at target levels. Not to exceed 12 tablets/day	The initial starting dose is 667mg tablet, 2 tablets per meal for 3meals a day, and the dose has to be adjusted as necessary to control serum phosphorus levels. The average final dose after 12 weeks of treatment is 3-4 tablets per meal.
Drug Interaction	Fluoroquinolones (Ciprofloxacin, Norfloxacin etc.) To monitor closely to the patients who are under Fluoroquinolone.	Calcium acetate may decrease the absorption of Tetracycline. Decreases the bioavailability of Ciprofloxacin remarkable.
Availability	1,000 mg of ferric citrate tablet (210 mg of elemental Iron)	A tablet contains 667 mg of Calcium Acetate.

Research Study:

A 12-Week, Double-Blind, Placebo-Controlled Trial of Ferric Citrate for the Treatment of Iron Deficiency Anemia and Reduction of Serum Phosphate in Patients with CKD Stages 3-5.

Background:

Iron deficiency anemia and serum phosphate levels > 4.0mg/dL are relatively common in chronic kidney disease stages 3 to 5 and are associated with higher risks of progressive loss of kidney function, cardiovascular events, and mortality.

Methods:

- In Chronic kidney disease stages 3 to 5,Iron deficiency anemia and serum phosphate levels 4.0 mg/dL are relatively common and are associated with higher risks of progressive loss of kidney function, cardiovascular events, and mortality.
- Patients on dialysis also require phosphorus binders to prevent hyperphosphatemia and they are also iron deficient.
- This study was done for 12 weeks on 149 patients with estimated glomerular filtration rates, 60 mL/min/1.73 m2, iron deficiency anemia (hemoglobin, 9.0-12.0 g/dL; transferrin saturation [TSAT] ≤ 30%, Serum ferritin ≤ 300 ng/mL), and Serum phosphate levels ≥ 4.0 to 6.0 mg/dL.
- Total 75 patients were given Ferric Citrate and 74 patients were studied on placebo.
- Use of intravenous iron or erythropoiesis-stimulating agents was prohibited.

Results:

Parameters	Ferric Citrate	
	Baseline	After 12 Weeks
TSAT	22% ± 7%	32% ± 14%
Serum phosphate levels (mg/dL)	4.5 ± 0.6	3.9 ± 0.6
Hemoglobin levels (g/dL)	10.5 ± 0.8	11 ± 1.0
Serum intact FGF-23 levels (pg/ml)	159 [102-289]	105 (65-187)

Conclusion:

Short-term use of ferric citrate repletes iron stores, increases hemoglobin levels, and reduces levels of serum phosphate, urinary phosphate excretion, and FGF-23 (Fibroblast growth factor) in patients with chronic kidney disease stages 3 to 5.

Reference: Am J Kidney Dis. 2015; 65(5):728-736