

## Effect of Fenofibrate Medication on Renal Function for Healthy Adult with No Cardiovascular Diseases

Metabolic syndrome, diabetes, and obesity are highly correlated with hypertriglyceridemia, LDL, cholesterol, and HDL. Fibrates are widely used to treat hypertriglyceridemia, a risk factor for arteriosclerosis. <sup>(1)</sup>

The American College of Cardiology/American Heart Association Guidelines, published in 2013, did not include recommendations for the treatment of elevated TG levels. The first goal of the previously published Adult Treatment Panel III was to reduce LDL cholesterol levels to a target level, when TG levels were between 200 mg/dL and 499 mg/dL. The second goal was to reduce non-HDL cholesterol to a target level. Drug treatments are recommended for TG levels  $\geq 500$  mg/dL, in order to reduce TG levels and prevent acute pancreatitis <sup>(2)</sup>. Even though fibrates have been reported to show fewer adverse reactions than other agents, they increase the frequency of myopathy, gallstones, and phlebothrombosis <sup>(3)</sup>. While they are not associated with an increased risk of renal failure, they may increase serum creatinine (Cr) levels <sup>(4)</sup>.

Conventionally, statins have been widely used to treat hyperlipidemia, so have a significant role in reducing the risk of cardiovascular diseases. <sup>(5)</sup>

A study published in July 2017 evaluates the effect of fenofibrate medication on renal function for healthy adult subjects with no cardiovascular diseases. This retrospective study included 558 outpatients who were prescribed 160 mg fenofibrate (fenofibrate group) or 10 mg atorvastatin (control group) between August 2007 and October 2015. The groups were randomly matched using propensity scores at a 1:1 ratio. The primary outcome was defined as the percentage change in serum Cr levels and eGFR. The secondary outcome was defined as the proportion of patients with a serum Cr level increase  $\geq 0.1$  mg/dL and an eGFR reduction  $\geq 10$  mL/min $\cdot$ 1.73 m<sup>2</sup> after treatment for 1–12 months.

The result of this study were, patients in the fenofibrate group showed greater changes in serum creatinine levels than those in the control group (9.73% $\pm$ 9.83% versus -0.89% $\pm$ 7.37%, P<0.001). Furthermore, 55.1% of patients in the fenofibrate group, but only 6.1% of those in the control group, exhibited a serum creatinine level increase  $\geq 0.1$  mg/dL (P<0.001). The fenofibrate group showed significantly greater declines in the estimated glomerular filtration rate than the control group (-10.1% $\pm$ 9.48% versus 1.42% $\pm$ 9.42%, P<0.001). Moreover, 34.7% of

the fenofibrate group, but only 4.1% of the control group, exhibited an estimated glomerular filtration rate decrease  $\geq 10$  mL/min $\cdot$ 1.73 m<sup>2</sup> (P<0.001).<sup>(6)</sup>

In conclusion, fenofibrate treatment resulted in increased serum creatinine levels and reduced estimated glomerular filtration rates in a primary care setting in healthy adults with no cardiovascular diseases. Therefore, regular renal function monitoring should be considered essential during fibrate administration.

### **References:**

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**Done by Pharm.D Students:**

**Rawan Al Khaldi, Karam Al Osta and Ghazal Abazaid.**

**Supervised by Dr. Eshrag Al -Abweeny.**