Long-term Use of Fenofibrate Was Associated with Increased Risk for Gallstone Disease among Maintenance Hemodialysis Patients

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Background

In spite of no sufficient evidence to guide the use of lipid-lowering drugs (LLD) among ESRD patients, these drugs are frequently used to treat dyslipidemia, a well-known contributor to cardiovascular diseases (CVD). Several studies have found that long-term use of LLD was associated with increased risk for gallstone disease (GSD) in the general population. However, the lithogenic risk of long-term LLD in ESRD patients has not been studied.

Aims

To assess the influence of long-term LLD on the prevalence of GSD among maintenance hemodialysis (MHD) patients.

Methods

This cross-sectional study included 108 eligible patients receiving chronic hemodialysis (HD): 35 on lovastatin, 34 receiving fenofibrate, and 39 without LLD uses. Gallstone disease (GSD) was defined as the presence of gallstones or undergoing cholecystectomy during the period of taking LLD. Abdominal ultrasonogrphy, demographic parameters, and laboratory data were obtained for all enrolled subjects. We applied ANOVA with Bonferroni's test and chi-square test to compare the differences among the three groups.

Results

The three groups had similar clinical characteristics in age, gender, duration of HD, body mass index, and total cholesterol value , except serum triglyceride values and the prevalences of cholethiasis (Table 1). However, higher prevalence of GSD and increased triglyceride level were statistically found in patients receiving fenofibrate, compared with other groups ($P < 0.05$).

Among dialysis patients on fenofibrate, increased age, female gender, and larger dosage of fenofibrate were associated with increased risk for GSD (Table 2).

Nevertheless, the subgroup analysis did not find the association between GSD and body mass index or diabetes status.

Conclusion

Our results also show that higher fenofibrate daily dosage, increased age, female gender, and longer duration of treatment were associated with higher opportunity to develop GSD in MHD patients. Serum level of Fenofibrate was higher in uremia or chronic renal failure patients. Hemodialysis cannot remove Fenofibrate. Higher serum level of Fenofibrate in hemodialysis patients promote bile cholesterol secretion and saturation. Therefore, we suggest that long-term prescription of fibrates should be avoided in the dialysis population on HD. Further large-scale studies are needed to confirm our findings.