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Publication Date

2019

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Peer reviewed

Abstract 13158: Clinical Characteristics of Triglycerides Slope Among Rapid Egfr Decliners

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Abstract

Introduction: Prior in vivo studies proposed that lipid dysregulation occurs as chronic kidney disease (CKD) advances, thus altering lipid levels such as serum triglycerides (TG). Elevated TG has been observed in CKD patients, but it is unclear if this is residual from metabolic syndrome risk factors or if TG increase with loss of kidney function. We thus examined the trajectory of TG over a decade of follow-up among patients with a rapid estimated glomerular filtration rate (eGFR) decline.

Methods: Using a mixed effects linear regression, we captured TG and eGFR measures between 2004-2014, with censorship for death and transition to end-stage renal disease to calculate TG and eGFR slopes. The final cohort was 202,015 US veterans with a rapid decline in eGFR (≤ -3 mL/min/1.73m²/year). Baseline demographics, prescription of any lipid-lowering medication over follow-up, any occurrence of a cardiovascular event over follow-up, and body mass index and albumin slope were stratified by TG trajectory.

Results: Among rapid eGFR decliners, a majority of patients had little to no change in TG over time, yet 5% (N=10028) experienced a rapid increase in TG (>5 mg/dL/year) over time, while 19% (N=38602) had a rapid decline in TG over time (≤ -5 mg/dL/year). Those with a TG increase were more likely to be younger, with a higher initial eGFR. Those with an increase or decrease in TG had greater proportions of ever being prescribed a fibrate or niacin, and a majority of patients were prescribed a statin. Those with a decline in TG had a greater proportion of atherosclerotic events including myocardial infarction and atherosclerosis. Patients with an increase in TG had lower proportions of non-hemorrhagic stroke and heart failure over time.

Conclusions: Most patients with a rapid eGFR decline maintained or decreased in TG over time, yet a some had an increase in TG. Future studies should examine the dynamic relationship between TG and eGFR trajectory over time and their impact on clinical outcomes.

	Total	Triglycerides Slope mg/dL/year		
		Decrease: ≤ -5	Stable: > -5 to ≤ 5	Increase: > 5
N, %	202015	38602(19%)	153385(76%)	10028(5%)
Age (year)	64 \pm 11	62 \pm 10	65 \pm 12	59 \pm 10
Female, %	3	3	4	4
Black, %	21	14	23	18
Initial Triglycerides (mg/dL)	134[91,204]	274[203,372]	116[83,163]	133[92,193]
Initial eGFR (mL/min/1.73m ²)	79[64,93]	78[61,93]	79[64,93]	85[72,97]
eGFR slope (mL/min/1.73m ² /year)	-3.9[-4.9, -3.4]	-4.0[-5.0, -3.4]	-3.9[-4.8, -3.4]	-4.0[-4.8, -3.4]
Albumin slope (g/dL/year)	-0.04[-0.08, -0.01]	-0.04[-0.09, -0.01]	-0.04[-0.08, -0.01]	-0.03[-0.06, 0.00]
Body Mass Index slope (kg/m ² /year)	-0.1[-0.4, 0.2]	-0.2[-0.5, 0.2]	-0.1[-0.4, 0.2]	0.1[-0.1, 0.4]
Ever Medication Use, %				
Statin	81	89	78	89
Fibrate	15	36	9	28
Niacin	14	23	11	22
Fish Oil	7	12	5	16
Ezetimibe	4	6	4	6
Bile Acid Sequestrants	5	7	5	7
Ever Comorbidities, %				
Myocardial Infarction	33	38	32	31
Angina	28	33	27	30
Other Ischemic Heart Disease	60	65	59	58
Non-Hemorrhagic Stroke	37	39	37	34
Atherosclerosis	45	47	44	41
Heart Failure	70	72	70	63

Triglycerides; Kidney; Renal function; Epidemiologic methods; Fenofibrate