

Biomarkers associated with kidney function and the role of statin: A clinicopathologic analysis at a single institution

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ABSTRACT

Introduction: The absolute benefit of treatment with statin appears to be greater among patients with nondialysis-dependent chronic kidney disease (CKD). Our study aims to determine the effect of different type of statin on kidney function and the associated factors. **Methods:** We performed a cross-sectional study involving patients with new statin prescription from January 1st, 2020, till December 31st, 2020. Convenient sampling was performed on statin-dispensing registry, and laboratory results were traced from local database of a single healthcare facility in northwest peninsular Malaysia. Information on baseline demographics, type and dosage of statin, and pertinent biomarkers within the next 6 months of statin initiation were collated. Multivariate analyses with linear regression were performed to determine the effect of selected variables on estimated glomerular filtration rate (eGFR). **Results:** A total of 406 patient records were analysed. Majority was male (59.1%), mean age of 61.2±13.68 years old, with Stage 4 CKD (36.0%). There were no significant effect of statin type on total cholesterol level, $F(2, 395)=0.88$, $p=0.415$ and eGFR, $F(2, 395)=1.94$, $p=0.146$. Multiple linear regression determined that age ($b=-0.72$, 95%CI: -0.97, -0.46) and fasting blood sugar ($b=-1.49$, 95%CI: -2.38, -0.61) was negatively associated with eGFR while haemoglobin level had a significant linear relationship ($b=5.13$, 95% CI: 3.42, 6.84). **Conclusion:** These findings suggest that appropriate and timely control of glycaemia in people with CKD is crucial to prevent complications. Anaemia on the other hand, is a direct consequence of advanced CKD, hence iron supplementation or erythropoiesis-stimulating agent may be offered early and optimised.