

March 04-05, 2019
Amsterdam, NetherlandsAmal Akour et al., Biochem Mol Biol J 2019, Volume:5
DOI: 10.21767/2471-8084-C1-024

URINARY MEGALIN AS A POTENTIAL MARKER FOR DIABETIC NEPHROPATHY: CORRELATION WITH VITAMIN D LEVELS

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Background: Urinary albumin excretion has been used as a marker for diabetic nephropathy. Megalin is a 600-kDa protein expressed in renal proximal tubular cells and it is involved in the reabsorption of vitamin D binding protein. Recently, urinary megalin excretion has been evaluated as a potential urinary marker of nephropathy. The aim of this study is to evaluate the correlation between the urinary megalin and serum vitamin D levels.

Methods: This was a pre-post study in patients with type 2 diabetes mellitus to examine the effect of 6-month vitamin D on diabetic nephropathy. **Results.** Urinary megalin was positively associated with SBP ($r=0.218$, $p=0.04$) but negatively with GFR ($r=-0.16$, $p=0.023$). In addition, when patients were divided according to urinary megalin cutoff point level that qualifies failure, urinary albumin, and TGs were higher in the "high-megalin" group, compared to those with "low-megalin" group. Glycosylated hemoglobin (HbA1c) was statistically and significantly higher in the high-megalin group. A stepwise forward logistic regression which was adjusted for SBP, FPG, and calcium levels showed that there is a significant inverse association between vitamin D levels and megalin levels in urine (OR= 0.281, p -value=0.047). **Conclusion.** Urinary megalin is a potential marker for diabetic nephropathy is correlated with the extent of vitamin D. Of the 209 patients, 63 patients who had vitamin D deficiency were given supplements of vitamin D. There was a significant improvement in kidney function (*increase* in GFR and *decrease* in ACR), with concomitant decrease in urinary megalin and increase in vitamin D3. The decrease in megalin was more pronounced than ACR, which indicates that megalin is more sensitive than ACR to changes in renal function over a shorter period of time.

Biography

Amal Akour received her Bachelor of Pharmacy from the University of Jordan in 2007 and had completed her Ph.D. in 2012 from Virginia Commonwealth University, Virginia, USA. She is currently working as an Associate Professor of Pharmacotherapy at the School of Pharmacy, University of Jordan, Amman, Jordan. Also, she had been working as Assistant Dean for Hospital affairs and Pharm.D. program in the same institute from September 2015 till September 2017. She is an active member of academic and scientific committees as well as social organizations. She is leading active research group evaluating markers of diabetes progression with the attempt of finding novel progression/therapeutic markers for this epidemic. She has a number of publications in reputed ISI Journals. In addition, she has volunteered to serve her community by providing free health-awareness lectures, supervising free medical days and reviewing publications.

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