

Commentary

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Mean Platelet Volume in Reflux Nephropathy

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Marker in Reflux Nephropathy.

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Vesicoureteral reflux (VUR) is the retrograde urine passage from the bladder to the ureter and kidney. It usually encompasses a very hot topic in the pediatric urology and nephrology literature because of its invasive method of diagnosis, irreversible adverse effect (kidney scar), and the ways of decreasing these problems. To date, a voiding cystourethrogram (VCUG) or a radionuclide cystogram (RNC) are the only methods of VUR definite diagnosis. Dimercaptosuccinic acid renal scintigraphy (DMSA) [1] is the method of choice for detecting the renal scar or renal parenchymal scarring (RPS). All above-mentioned diagnostic tests have two main burdens for patients including ureteral catheterization and radiation exposure. To diminish these complications, researchers have declared several markers as noninvasive indicators of VUR and RPS including increased IL8 as a RPS and VUR marker [2], high IL6 for RPS [3], and increased mean urine calcium [4] and uric acid [5] for detecting VUR. The mean platelet volume (MPV) is one of the components of complete blood cell count (CBC) which can pull out the average platelet size measurement by a CBC analyzer apparatus. The average platelet size may be influenced by a series of diseases which can increase the production of platelets in the

bone marrow and their destruction [1]. Platelet destruction and increased MPV are seen in inflammatory bowel disease [5], immune thrombocytopenic purpura (ITP), myeloproliferative diseases, Bernard-Soulier syndrome, and pre-eclampsia [7]. Abnormally, lower MPV values correlate primarily with thrombocytopenia when it is due to an impaired production as in aplastic anemia. Researchers evaluated the role of MPV as an inflammatory marker in different disorders including acute appendicitis, pulmonary tuberculosis, ocular Behcet's disease, chronic spontaneous urticaria, acute coronary syndrome, and myocardial infarction, and found different levels of MVP in these diseases [8-13]. MPV has drawn attention in nephrology, as well. Yousefichaijan et al were the first researchers who considered MPC (mean platelet count) and MPV for assessing VUR and its complication (RNS). Their study was conducted in febrile group of UTI patients who had VUR (controls) and a group that had VUR and RNS (cases). They reported a high platelet count and low levels of MPV in patients with reflux nephropathy as compared with patients with VUR and no evidence of reflux nephropathy [14]. However, their study could not clarify why all their patients were selected from among girls and

did not have a control group of febrile UTI patients without VUR and RNS to rule out the effect of inflammation on MPC and MPV. It seems more extensive investigations are required to confirm the role of MPC and MPV in VUR and RNS.

- Scandinavian Journal of Clinical & Laboratory Investigation 2011; 71(7): 613-619.
14. Yousefichaijan P, Rafiei M, Eghbali A, et al. Mean Platelet Volume: A predictive Marker in Reflux Nephropathy. J Ped. Nephrology 2014;2(4):137-139.

References

1. Mohkam M, Maham S, Khatami A, et al. Kidney Ultrasonography and Dimercaptosuccinic Acid Scans for Revealing Vesicoureteral Reflux in Children With Pyelonephritis: A 7-Year Prospective Cohort Study of 1500 Pyelonephritic Patients and 2986 Renal Units. *Nephro-Urol Mon* 2012;4(1):350-355.
2. Gokce I, Alpay H, Biyikli N, et al. Urinary Levels of IL-6 and IL-8 in Patients with VUR. *PediatrNephrol*. 2010 May; 25(5):905-12.
3. Tramma D, Hatzistyliaou M, Gerasimou G, Lafazanis V. Interleukin-6 and interleukin-8 levels in the urine of children with renal scarring. *PediatrNephrol*. 2012;27(9):1525-30.
4. Badeli H, Sadeghi M, Shafe O, Khoshnevis T, Heidarzadeh A. Determination and comparison of mean random urine calcium between children with vesicoureteral reflux and those with improved vesicoureteral reflux. *Saudi J Kidney Dis Transpl*. 2011 Jan;22(1):79-82.
5. Madani A, Kermani K, Ataei N, et al. Urinary calcium and uric acid excretion in children with vesicoureteral reflux. *PediatrNephrol*. 2012 Jan;27(1):95-9.
6. Liu, S, Ren, J, Han, G. Mean platelet volume: a controversial marker of disease activity in Crohn's disease. *European Journal of Medical Research* 2012;17: 27.
7. Lippi G, Filippozzi L, Salvagno GL, et al. Increased mean platelet volume in patients with acute coronary syndromes. *Arch Pathol Lab Med* 2009; 133:1441-43.
8. Song Liu, Jiana Ren, Gang Han, Gefei Wang. MPV: a contraversial marker of disease activity in crohns disease. *Eur J Med Res*. 2012;17(1):27.
9. HuseyinNarci, Emin Turk, ErdalKaragulla, TurhanTogan, KezibanKarabulut. The role of MPV in the diagnosis of acute appendicitis. *Iran Red Crescent Med J*. 2013; 15(12):e11934.
10. Gulsah Gunluoglu,EsraErtanYazar,Nurdan Simsek Veske,EkremCengizSeyhan,SedatAltin. Mpv as an inflammation marker in active pulmonary tuberculosis. *MultidiscipRespirMed* 2014;9(1):11.
11. Fatih Mehmet Turkcu, Abdullah KursatCingu, HarunYuksel, YasinCinar. MPV in ocular behcetsdisease. *Scientific word journal* 2013;215912.
12. Chu H, Chen WL, Huang CC. Diagnostic performance of mean platelet volume for patients with acute coronary syndrome visiting an emergency department with acute chest pain: the Chinese scenario. *Emerg Med J* July 2010;doi:10.1136/emj.2010.093096.
13. Tekbas E, Kara AF, Ariturk Z, et al. Mean platelet volume in predicting short- and long-term morbidity and mortality in patients with or without ST-segment elevation myocardial infarction.