

too? What is the optimal dose of metformin for renoprotection?

### CONFLICT OF INTEREST

None declared.

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## Urine Examination in the Era of Modern Diagnostics

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Urine examination, dipstick, and urine microscopy, the fundamental, common, and inexpensive diagnostic methods in nephrology have been replaced relatively by more sophisticated procedures in many nephrology units and have become one of the laboratory personnel tasks

and not nephrologists.<sup>1</sup> Tsai and colleagues, in their study of acute kidney failure, showed the increased chance of correct diagnosis from 19.2% to 69.3% when urinalysis report was done by a nephrologist.<sup>2</sup> Fogazzi and colleagues compared in their well-designed study the features of urine

findings in proliferative and nonproliferative glomerular diseases and found higher frequencies of erythrocyte, leukocyte, tubular epithelial cell, and different casts in proliferative glomerular disease.<sup>3</sup> Those findings provided 80.8% sensitivity and 79.2% specificity for clinical diagnosis.<sup>3</sup> Such an approach may help to identify risk factors in different diseases such as Henoch-Schonlein nephritis in children to justify kidney biopsy indications and aggressive treatment.<sup>4</sup> Interestingly, there is a case report of adenine phosphoribosyl transferase deficiency, diagnosed by urine examination and unusual crystals which drew nephrologists' attention in a patient with poor graft function.<sup>5</sup>

Furthermore, 16% prevalence of decoy cells in kidney transplant patients emphasizes the consideration of inexpensive urine examination, although decoy cells are not either sensitive or specific for BK virus infection.<sup>6,7</sup>

Re-introduction of this test into clinical practice looks necessary from time to time. The importance of this test application seems more serious when other facilities for diagnosis is lacking, especially in many countries of developing world with restricted human and financial resource.<sup>8,9</sup>

Many argue that the nephrologists are still needed to take their role in interpretation of what is seen, because they may know what to look for based on the clinical setting. Urine examination should be an integral part of nephrology educational curriculum. Hami and coworkers enthusiastically studied the attitude of Iranian nephrologists towards the subject.<sup>10</sup> By a well-prepared questionnaire, under the supervision of an outstanding international urine examination expert, professor Fogazzi, renal centers were questioned about involvement of nephrologists in performing urine microscopy. They once again put emphasis on the necessity for clinical nephrologists to roll up their sleeves to take the responsibility of this task more because of the superiority of nephrologist-performed urinalysis to laboratory staff-performed urinalysis in finding out the diagnosis.

To achieve as much as possible data from this diagnostic tool all aspects of it should be taken into account. Proper cleansing procedures, sample collection, handling, slide preparation, equipment, and knowledgeable interpreter are all important.<sup>11</sup>

Thanks to professor Fogazzi, the highly regarded expert in the field, the second workshop was held in Isfahan, Iran in 2012 and most mentioned items were reviewed comprehensively.

#### CONFLICT OF INTEREST

None declared.

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