

Acute tubulointerstitial nephritis due to phenytoin: Case report commentary.

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Commentary

The kidneys are formed mostly by interstitium and tubules, demonstrating the importance of a better understanding of Tubulo-interstitial Nephritis (TIN). The kidney injury caused by TIN can be acute or chronic, resulting in decreased renal function and normally accompanied by nonspecific symptoms. The Acute Tubulo-interstitial Nephritis (NTIA) is most often due to allergic drug reactions or to infections [1].

In fact, NTIA corresponds to about 10%-15% of all cases of Acute Kidney Injury (AKI) and it is especially common in hospitalized patients [2,3]. More than two-thirds of all these cases are drug-induced. The number of tubulointerstitial nephritis' cases has increased due to the increasing number of prescribed drugs [3]. Many drugs can induce tubulointerstitial nephritis [4]. In our report, we describe a rare case of tubulointerstitial nephritis caused by phenytoin in a polytraumatized and hospitalized pediatric patient (previously healthy).

The clinical spectrum of NTIA is large, patients with NTIA typically present with nonspecific symptoms of acute renal failure. The patient's clinical picture may range from a simple asymptomatic elevation in creatinine or Blood Urea Nitrogen (BUN) or abnormal urinary sediment, to generalized hypersensitivity syndrome with the classic triad of fever, rash and eosinophilia, even culminating in oliguric renal failure. A relatively rapid decline in renal function, obtained by measuring the elevation of creatinine and BUN is common to find [5].

In the light of a diagnosis or a diagnostic suspicion of ATIN, the cornerstone of the management is to withdraw the offending cause immediately [6]. Thus, diagnosis of drug-induced ATIN must be considered in all patients with unexplained renal insufficiency or when an abnormal urinalysis is noted in someone who has been exposed to drugs that are known to possibly cause ATIN [7]. Nevertheless, a significant proportion of patients, about 30% to 70%, did not fully recovered their baseline renal function, probably due to the rapid transformation of interstitial cellular infiltrates into large areas of renal fibrosis [4].

The kidney biopsy remains as the gold standard for diagnosis of ATIN, with the typical histopathologic findings of plasma cell and lymphocytic infiltrates in the peritubular areas of the interstitium, generally with interstitial edema. However, kidney biopsy is not necessary in all patients. In patients for whom the diagnosis show to be obvious, for whom a probable offending

medication can be easily withdrawn, or who improve promptly after withdrawal of a potentially causing drug, supportive management can proceed safely without invasive investigation [5]. This shows the great importance of identifying medications as possible causes in patients with rapid deterioration of renal function, because extended exposure may result in less chance of obtaining full recovery [2].

Given the pathogenic role of cell-mediated immunity, corticosteroid treatment has been commonly employed [8]; there is still quite controversial about its use, more trials studies is needed [2]. The physiopathological rationale to explain the benefits of early corticosteroid treatment in drug-induced ATIN could be related to the fast transformation of interstitial cellular infiltrates into areas of irreversible interstitial fibrosis. Early corticosteroid treatment would probably reduce the extension of inflammatory infiltrates, thus decreasing the chances of subsequent fibrosis [3].

Normally, the prognosis is good, while a certain amount of these patients will develop Chronic Kidney Disease (CKD) [6]. Clinically, it is practically impossible to distinguish those patients that will develop CKD, so we defend high suspicion of ATIN in hospitalized patients with rapid deterioration of renal function and long-term follow-up of all patients, especially for pediatric patients. The identification of a certain medication that causes TIN is considered as an irrevocable contraindication to its future reuse [1].

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