Introduction

With the increasing capacity of the medical community to treat the most serious life-threatening conditions, the in-hospital exposure to nephrotoxic drugs has increased as has the risk of drug-induced acute renal failure (ARF), after exclusion of other causes of renal failure while the expanded drug treatments available for outpatient use is contributing to the rise in community acquired ARF **(Nash et al., 2002).**

Several drugs can cause acute ARF including antibiotics, diuretics, antiviral agents, and non-steroidal anti-inflammatory agents (NSAIDs) **(Appel, 2005).**

The incidence rate of ARF around the world is not well known. Studies in the United States and Spain have shown incidences varying between an average of 23.8 cases per 1000 discharges with an 11% yearly increase between 1992 and 2001, to an increase from 61 to 288 per 100,000 population between 1988 and 2002 **(Lameire et al., 2006).**

Arije et al. reported a high incidence of 1811 cases of ARF due to drug-induced nephropathy (DIN) per million population during 2003. The relatively wide disparity in reported incidence rates and the increasing frequency of the condition raise concerns as to the real magnitude of the problem **(Arije et al., 2000)**.

Whereas in developed regions elderly patients predominate, in developing countries, ARF due to drug-induced nephropathy is a disease of the young and children, in whom volume-responsive "prerenal" mechanisms are common **(Vachvanichsanong et al., 2006) & (Askenazi et al., 2006) & (Khakurel et al., 2005)**.

Definition:

Drug induced-nephropathy is easily defined as a syndrome characterized by acute deterioration of renal function after administration of the drug by anyway (oral, intravenous or intramuscular). DIN is generally defined as an increase in serum creatinine more than 25% or 0.5 mg/dL (44 μmol/L) above baseline (>44 mol/l) after administration of drug in acute renal failure or increase serum creatinine >10mg/dl in chronic renal failure and sudden decrease in glomular filtration rate accompanied by azotemia **(Starr, 1998).** Thus the diagnosis of DIN should meet the following 3 criteria :

(1)sudden reduction in renal function quantified by either rapid increase or slowly increase in serum creatinine concentration.

(2)manifestation of impaired function after continuous administration of the drug .

(3)exclusion of other causes of renal failure **(Sandler et al., 1998)**.

Incidence:

The true incidence of DIN is difficult to assess because of differences among the various published studies in the definition of DIN, the proportion of high-risk patients, the type of administration of drug and the use of preventive measure **(Jayakumar et al., 2006).**

The contribution of nephrotoxic drugs to community acquired acute kidney injury is particularly important since the total number of all cases of acute kidney injury, as derived from community based studies, is 2 to 3.5 times greater that reported from in-hospital statistics **(Sesso et al., 2004).**

A one-year survey of 2,175 cases of ARF, 398 (18.3%) were considered to be drug-induced. Antibiotics were the most frequently cited drug followed by analgesics, NSAIDs and contrast media and this relationship persists. More than half of the patients had non-oliguric ARF **(Nash et al., 2002).**

Mehta et al. reported in a study that the mortality rate of 12.6% is lower than other patients who develop ARF due to other cause (following surgery or trauma). At 6-month post-acute kidney injury, 47.7% were fully recovered, 15.3% had regained previous renal function and 23.1% had some degree of residual renal impairment **(Mehta et al., 2004).**

Residual renal impairment was more frequent in both older and oliguric patients, in those with previous chronic renal insufficiency, those who received antibiotics, and those whose duration of ARF was prolonged. Table (1) summarizes the incidence of drug-induced ARF reported for the last two decades. As can be seen, the incidence of ARF due to contrast media and antibiotics is variable depending on the population included **(Sesso et al., 2004).**