

## THYROID DISORDER ASPECT IN SECTION OF PATIENTS WITH CHRONIC KIDNEY DISEASE BEFORE AND AFTER HEMODIALYSIS

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**Abstract :** It is well established that there is interaction between thyroid and kidney. Many studies reviewed the interaction between thyroids disorder and renal statues while the opposite situation, the interaction between renal diseasesand thyroid hormones, need more study to understand it. The aim of this research were to compare the biochemical variables such as blood urea and serum creatinine in patients with chronic kidney disease (CKD) between before and after hemodialysis and their affect on thyroid hormones (T3, T4), caltsionin (CT), and thyroid stimulation hormone (TSH).Blood samples were collected from 25 patients with renal failure on hemodialysis, who visited Yarmok hospital in Baghdad/ Iraq, after and before dialysis and 25 healthy as control. Their ages were between 20 to 80 years old. Blood urea,serum creatinine, TSH, and CT levels were significant higher in the patients before dialysis which went back down after dialysis but this levels remained significant higher than in control while T3 and T4 levels were significant lower in patients group whether before or after daiylsis compared to control groups. T3 and T4 have negative correlation with blood urea but not with serum creatinine while TSH and CT have significant positive correlation with both blood urea and serum creatinine. It could be concluded that the renal diseases could be caused thyroid disorders and may be also parathyroid disorder due to the closed interaction between CT and parathyroid hormone (PTH) which need more works to prove it.

**Key words :** Blood urea, serum creatinine, T4, T3, TSH

### INTRODUCTION

The definition and classification of chronic kidney disease (CKD) has evolved over time, but now, the international guidelines determine this condition as a decrease in renal function due to eitherdegrease glomerular filtration rate (GFR) less than 60 ml / min per 1 x 73 m<sup>2</sup>, Kidney damage, or both, for at least 3 months (Webster A C *et al*, 2017) CKD is usually an irreversible progressive condition and is the 8th leading cause of death (Mohamedali M *et al*, 2014). It affects more than 1500/ million people in high prevalence countries. Nearly two-thirds of CKD patients receive haemo dialysis, one quarter have kidney transplants, and one tenth receive peritoneal dialysis (Abbasi M A *et al*, 2010). CKD have many Risk factors include hypertension, hyperlipidemia, diabetes, and thyroid disorders (Mohamedali M *et al*, 2014).

The interaction between the functions of kidney and thyroid is known for many years (Kaptein E M, 1986). Physiology and development of kidney affect by thyroid dysfunction (Braunlich H *et al*, 1984; Vargas F *et al*,

2006 and Kumar J *et al*, 2009), whereas kidney disease can lead to thyroid disorder (Mori T and Cowley A W, 2004 and Kaynar K *et al*, 2007). Thyroid and kidney disorders may co-exist with common triggers. Furthermore, treatment of on disease could be affecting other organs (Yu F *et al*, 2007 and Wang L C *et al*, 2003).

In CKD patients, commonly observed the functional disorder of thyroid (Rhee C M *et al*, 2015). Hypothyroidism, which is usually determined by biochemical tests included increased TSH in conjunction with a reduced (overt) or normal thyroxine (subclinical hypothyroidism) (Ladenson P W 2013), is more prevalent in patients with impaired renal function compared to others have normal renal function (Lo J C *et al*, 2005). Furthermore,thyroid dysfunction is often observed in CKD patient due to changes in thyroid hormones synthesis, metabolism and regulation (Rhee C M *et al*, 2015; Ladenson P W 2013; Lo J C *et al*, 2005 and Kaptein E M, 1996). These need more study to understand it, so the aim of this research were to compare the biochemical variables such as urea and creatinine in patients with chronic kidney disease (CKD) between before and after