



ORIGINAL RESEARCH PAPER

Biochemistry

HYPERPROLACTINEMIA IN CHRONIC KIDNEY DISEASE PATIENTS ON HEMODIALYSIS.

KEY WORDS:

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ABSTRACT

Background: Prolactin (PRL) is a protein produced in the lactotroph cells of the anterior pituitary gland.

- Chronic Kidney Disease (CKD) is a major prevalent disease worldwide associated with low grade systemic inflammation that influences individuals to higher incidence of atherosclerotic complications.
- Both prolactin clearance and production are altered in CKD. The aim of the current work was to assess the serum prolactin level in Renal Failure or chronic kidney disease in order to acquainting endocrinologists with information of hyperprolactinemia in renal failure.

Aim: "Hyperprolactinemia in chronic kidney disease patients on hemodialysis"

Objective Of The Study: To evaluate serum prolactin level in Renal Failure as prolactin is having several biological actions that contribute in atherosclerotic progression and leads to insulin resistance.

Methodology: Data collected from 50 patients of chronic kidney disease on hemodialysis. In order to measure the concentration serum of prolactin, we took from all our cases 5 ml blood between 10 to 1 pm. The samples were transferred into labeled tubes. In addition, the samples were centrifuged at 3000 rpm for 5 min. Then, the serum samples transferred by used clean tips and stored at -200C until the values of prolactin were measured using chemiluminescence.

Study Type: Cross sectional.

Time Perspective: Retrospective

Result: Data collected from 50 patients .35 were males and 15 females. Around 24 cases have creatinine less than 5 mg/dl. 18 cases showing serum creatinine 5-10mg/dl. 27 cases had elevated prolactin.

Conclusion: The data collected in the present study showed that hyperprolactinemia is detected in 54% of patients with CKD. Hence its concluded that CKD is associated with hyperprolactinemia.

BACKGROUND

Prolactin (PRL) is a protein produced in the lactotroph cells of the anterior pituitary gland.

- Chronic Kidney Disease (CKD) is a major prevalent disease worldwide associated with low grade systemic inflammation that influences individuals to higher incidence of atherosclerotic complications.
- Both prolactin clearance and production are altered in CKD. This study is about hyperprolactinemia and its correlation with a chronic kidney disease (CKD. Prolactin levels occur substantially elevated in CKD, with predominate of hyperprolactinemia vary between 30% and 65%(1,2) (Anil, 2017; Hou et al, 1985). Prolactin production is changed in CKD, and its clearance is reduces as well as the biological activity for Prolactin is increased(3,4)(Patients with established CKD on maintenance dialysis irrespective of etiology).
- Recently studies that showed prolactin might cause biologic actions that contribute in the atherosclerotic process as well cause insulin resistance. Additionally, it is related to endothelial dysfunction. Some papers reported patients with transient ischemic attacks and in preeclampsia, acute phase of coronary syndromes (Raaz et al, 2006), essential hypertension (Stumpe et al, 1977) and during ischemic strokes (Wallaschofski et al, 2006), that they have Hyperprolactinemia. Vascular derangements may associate with higher serum prolactin level which happens in CKD.
- As Consequence, the levels of serum prolactin in chronic kidney disease patients should be undertaken as a prospective clinical and biochemical study. The aim of the current work was to assess the serum prolactin level in Renal Failure or chronic kidney disease in order to acquainting endocrinologists with information of hyperprolactinemia in renal failure.

women were between 20 to 73 years old were taken.

Study Design: Cross sectional study of 50 patients.

Inclusion Criteria:

- All consented cases who were diagnosed having CKD in inpatient department of Osmania General Hospital.
- Establishing CKD on maintenance dialysis regardless of etiology
 - Having uremic symptoms for three months or more.
 - Decreased creatinine clearance, elevated serum creatinine and blood urea.

Methodology:

Data collected from 50 patients of chronic kidney disease on haemodialysis.

In order to measure the serum concentration of prolactin, we took from all our cases 5 ml blood. The samples were transferred into labelled tubes.

In addition, the samples were centrifuged at 3000 rpm for 5 min. Then, the serum samples were transferred using clean tips and stored at -200C until the values of prolactin were measured using chemiluminescence

Statistical Analysis:

From our data the mean, percentage, standard deviation chi-square test and multiple correlation were done using SPSS 2 software.

The p value was used to compare the cases mean value with control mean value and the p value of <0.05 was considered statistically significant.

RESULTS:

Data collected from 50 patients of CKD majority on dialysis (stage4 above). 35 were males and 15 females. Around 15 cases

MATERIAL AND METHODS

Sample Size: 50 Cases. In this research all cases men and

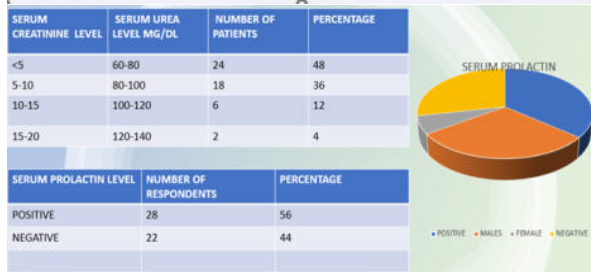
have creatinine less than 5 mg/dl.

18 cases showing serum creatinine 5-10mg/dl. 17 cases had serum creatinine > 10mg/dl

Out of the 50 cases 28 cases had elevated prolactin.

- Normal prolactin values: Males: 2 to 18 (ng/mL)
- Nonpregnant females: 2 to 29 ng/mL
- Pregnant females: 10 to 209 ng/mL
- Hyperprolactinemia is the main endocrine abnormalities noticed in patients with CKD. Some researches obtained that the level of serum prolactin stay raised in patients with CKD. This elevated level happens in both men and women patients with CKD.
- Lipid profile was done to correlate the effect prolactin as atherosclerotic.

HYPERPROLACTINEMIA	MEAN	STANDARD DEVIATION	STATISTICAL INFERENCE
POSITIVE	3.45	1.620	T=4.704
NEGATIVE	5.73	1.830	df=48 <0.05 significant



CONCLUSION:

- CKD is associated with increased serum levels of hormone prolactin (Hyperprolactinemia)
- Hyperprolactinemia could be detected in 56% of patients with CKD.

Especially in male, CKD is connected with increased serum levels of hormone prolactin (Hyperprolactinemia).

LDL Level were elevated in few cases of CKD associated with elevated prolactin.

Prolactin as a atherosclerotic marker requires further studies. Hence it is important to evaluate serum prolactin level in Renal Failure as prolactin is having several biological actions that contribute in atherosclerotic progression and leads to insulin resistance.

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