CONCENTRATION OF THE SERUM Hs-CRP IN PATIENTS WITH CHRONIC RENAL FAILURE WHO WERE TREATED BY CONSERVATIVE THERAPY

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Abstract
Background: Serum High sensitivity C-reactive protein (Hs-CRP) is an important inflammatory marker in patients with chronic renal failure. The increase in Hs-CRP levels in patients with chronic renal failure increases the speed of progression to end-stage renal failure in patients with chronic renal failure and increased cardiovascular risk in patients with chronic renal failure. **Objectives:** 1) To survey the concentration of serum Hs-CRP in patients with chronic renal failure who were treated by conservative therapy; 2) To survey the correlation of concentration of serum Hs-CRP with concentration of serum creatinine and albumin in patients with chronic renal failure who were treated by conservative therapy. **Methodology:** A cross-sectional study. **Results:** 1) The concentration of serum Hs-CRP in patients with chronic renal failure who were treated by conservative therapy was 45.61 ± 19.48 mg/L and the concentration of serum Hs-CRP of the control group was 1.56 ± 0.77 mg/L. The diffrence has statistical significance (p <0.001); 2) The concentrations of serum Hs-CRP in patients with chronic renal failure who were treated by conservative therapy positively correlated with serum creatinine concentrations and inversely correlated with serum albumin level.
Key words: *Hs-CRP, chronic renal failure, conservative therapy*

1. INTRODUCTION

Cardiovascular injury is the leading cause to lead to the death in patient with chronic renal failure at any stage. Hs-CRP is an important inflammatory marker in patients with chronic renal failure. The increase in Hs-CRP levels in patients with chronic renal failure increases the speed of progression to end-stage renal failure in patients with chronic renal failure and increased cardiovascular risk in patients with chronic renal failure.

This research has been carried out to achieve two objectives:

1. To identify the concentration of serum Hs-CRP in patients with chronic renal failure who were treated by conservative therapy.

2. To identify the correlation of concentration of serum Hs-CRP with concentration of serum creatinine and albumin in patients with chronic renal failure who were treated by conservative therapy.

2. MATERIAL AND METHODS

2.1. Material

- *Group of patients:* Total 50 cases of chronic renal failure caused by chronic glomerulonephritis who were treated by conservative therapy. All cases were collected from the Department of Intenal medicine of Nghe An General Hospital.

- *Control group:* 30 healthy people from 18 years old and over.

- *Excluding from this study:*

+ Patients with acute inflamatory diseases.

+ Patients with chronic inflamatory disease like rheumatoid arthritis, osteoarthritis, systemic lupus erythromatosus (SLE), autoimmune disease, tuberculosis, diabetes, stroke, any hepatic diseases and malignancies.

2.2. Methods

2.1. Designing of study: A cross-sectional study

2.2. The steps of study

- To design the protocol of study

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- Clinical judgment:

+ History taking

+ Clinical exmination

+ Evaluating the blood pressure according to WHO/ISH2004.

- To conduct the basic tests: urine test, blood chemistry (ure, creatinine, protid, albumin), renal ultrasound.

- Calculating the glomerular filtration rate based on the Cockroft-Gault formula.

- Quantification of serum Hs-CRP:

The quantification of serum Hs-CRP were conducted at Biochemistry Department - Hue Central Hospital.

Serum samples were separated from the blood of patients and control subjects by centrifugation at 3000 rpm, and stored frozen at - 30°C until further analysis. The level of Hs-CRP in serum samples was estimated by a high sensitivity immuno assay on IMMULITE. The concentration of serum Hs-CRP is denoted by mg/l.

3. RESULTS

3.1. The concentration of serum Hs-CRP in control group by gender

Table 1. The concentration of serum Hs-CRP in control group by gender

	Man	Woman
Concentration of serum Hs-CRP (mg/L)	1.41 ± 0.89	1.62 ± 0.43
	p > 0.05	

The concentration of serum Hs-CRP in control group doesn't have the difference between 2 genders (p>0,05).

3.2. The concentration of serum Hs-CRP in patients with chronic renal failure who were treated by conservative therapy.

Table 2. The concentration of serum Hs-CRP in patients with chronic renal failure and control group

	Control group	Group of patients
Concentration of serum Hs-CRP (mg/L)	1.56 ± 0.77	45.61 ± 19.48
	p <0.001	

Compared to control group , the concentration of serum Hs-CRP in patients with chronic renal failure which is higher. The difference has statistically significant (p<0,001).

3.3. The correlation between the concentration of serum Hs-CRP and creatinine in patients with chronic renal failure

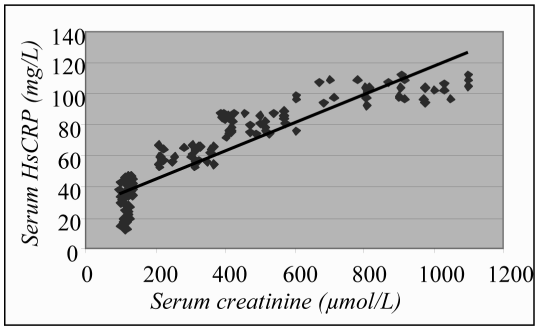

Chart 1. The correlation between the concentration of serum Hs-CRP and creatinine in patients with chronic renal failure

Having the positive linear correlation between the concentration of serum Hs-CRP and the concentraion of serum creatinine (r = 0.506; p = 0.01).

3.4. The correlation between the concentration of serum Hs-CRP and albumin in patients with chronic renal failure

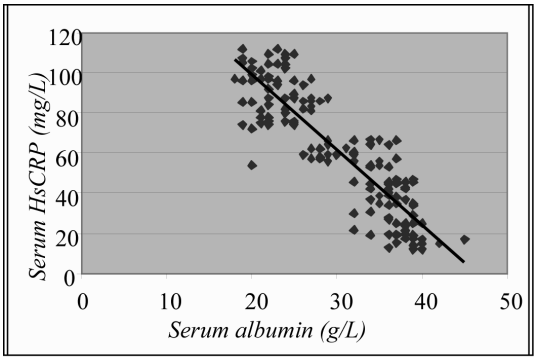

Chart 2. The correlation between the concentration of serum Hs-CRP and albumin in patients with chronic renal failure

Having the inverse linear correlation between the concentration of serum Hs-CRP and the concentraion of serum albumin (r = 0.621; p = 0.01).

4. DISCUSSION

4.1. The concentration of serum Hs-CRP in the control group.

The concentration of serum Hs-CRP of control group in man is 1.41 ± .89 mg/l and in woman is 1.62 ± 0.43 mg/l. The difference doesn't have statistically significant (p>0.05). This shows that gender did not affect the concentration of serum Hs-CRP.

4.2. The concentration Hs-CRP in patient with chronic renal failure.

Our research results shows that the concentration of serum Hs-CRP in patients with chronic renal failure who were treated by conservative therapy is 45.61 ± 19.48 mg/l, it is higher than the concentration of serum Hs-CRP in the control group that is 1.56 ± 0.77 mg/L. The difference have the statistically significant ($p < 0.001$).

Our research result is similar to Roksana Yeasmin's research result. It concluded that the concentration of serum Hs-CRP in patient with chronic renal failure which is higher than the concentration of serum Hs-CRP in control group.

4.3. The correlation between the concentration of serum Hs-CRP with the concentration of serum creatinine and albumin.

The concentration of serum Hs-CRP in patient with chronic renal failure has positive correlation with concentration of serum creatinne. This also corresponds with: When the more serious stage of chronic renal failure is, the more increasable concentration of serum Hs-CRP is. This is also a factor which promotes inflammation status in patient with chronic renal failure and contributes to increase cardiovascular damage in patient with chronic renal failure. Our research result is also similar to Roksana Yeasmin author's and partners when studying about concentration of serum Hs-CRP in patient with chronic renal failure and concluded that the concentration of serum Hs-CRP in patient with chronic renal failure has the strong positive correlation with concentration of serum creatinine.

Having the inverse correlation between the concentration of serum Hs-CRP with the concentration of serum albumin in patients with chronic renal failure who were treated by conservative therapy. A lot of research proved that having the clear correlation between inflammation status and markers of nutrition in patients with chronic renal failure, specially the concentration of serum albumin. Zoccali and partners reported about the inverse correlation between the concentration of serum Hs-CRP and nutritional markers in patients with chronic renal failure.

5. CONCLUSION

- The average concentration of serum Hs-CRP in patients with chronic renal failure who were treated by conservative therapy is 45.61 ± 19.48 mg/l, it is higher than the concentration of serum Hs-CRP in control group that is 1.56 ± 0.77 mg/L. The difference have the statistically significant ($p < 0.001$).

- There are the positive correlation between the concentration of serum Hs-CRP with the concentration of serum creatinine and there are the inverse correlation between the concentration of serum Hs-CRP with the concentration of serum albumin in patients with chronic renal failure who were treated by conservative therapy.

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