Objective: To study whether adiponectin in serum of patients with coronary heart disease is reduced, and compare with the test results in total cholesterol (TC), Triglyceride (TG), high density lipoprotein cholesterol (HDL-C), low density lipoprotein cholesterol (LDL-C), blood glucose (GLU), C-reactive protein (CRP).

Method: We selected 80 cases of coronary heart disease patients as the experimental group, 50 healthy subjects as control group. The coronary heart disease group compared with the control group, we know the changes of adiponectin in coronary heart disease group and compared coronary heart disease group with control group in test results of blood lipid, blood glucose, C-reactive protein.

Results: Adiponectin in coronary heart disease group was (0.47±0.09) mg/L, which decreased significantly comparing to control group’s level (t=-18.4, P<0.001), HDL-C in coronary heart disease group was (1.24±0.04) mmol/L, which decreased significantly comparing to control group’s level (t=-27.67, P<0.001). The difference was statistically significant (P<0.05).

Conclusion: The level’s adiponectin in patients of coronary heart disease dropped, which lead to hypoadiponectinemia, Hypoadiponectinemia may be one of the risk factors of coronary heart disease.
outpatient service department over the same period, aged from 45 to 70 years old, male patients were 29 cases, and female 21 cases, average age was (60.2±6.7) years old. They were normal persons except for severe liver and kidney dysfunction, hypertension, high blood lipid, diabetes, acute inflammation and traumatic disease.

2.2. Research methods

1. Specimen source and treatment: The detected patients were phlebotomized 2 mL fasting elbow vein blood in the second day morning, which was placed in non- anticoagulant centrifugal tube and centrifuged for 10 min with 3000 rpm/min, and froze for preparation. At the same time, they were phlebotomized fasting elbow vein blood for testing total cholesterol (TC), Triglyceride (TG), high density lipoprotein cholesterol (HDL-C), low density lipoprotein cholesterol (LDL-C), blood glucose (GLU), c-reactive protein (CRP). The all reagents used were Beckman Kurt.

2. Testing serum adiponectin concentration: Detection of serum adiponectin were used by the enzyme-lined immunoassay (ELISA) and automatic enzyme immunoassay analyzer.

2.3. Statistical methods

The experimental data were analyzed by SPSS 13 statistical software, the measurement data is said with mean±SD. We compared the difference of the mean between the two groups by t-test. If the result is \( P<0.05 \), it is said that result have difference and statistically significance.

3. Result

3.1. Serum adiponectin results in two groups

Serum adiponectin in CHD is (0.47±0.09) mg/L that is decreased significantly comparing to control groups. Level (t=-18.41, \( P<0.001 \)).

3.2. Biochemical index results in two groups

Blood lipid results, such as TC, TG, LDL-C, GLU, CRP in CHD group were higher than the control group, which had difference and statistically significance (\( P<0.05 \), but the test result of HDL-C was lower than the control group, which had difference and statistically significance (\( P<0.05 \)). See Table 1.

4. Discussion

Adiponectin (APN)\(^3\) is a kind of hormone protein secreted by fat cell specifically, it’s structure is similar with complement factor C1q and rich in content relatively. In normal human serum, the adiponectin concentration is 1.9-17.0 mg/L. In recent years, Many experiments confirmed APN play the role of anti-atherosclerosis in the early, procedural formation of atherosclerotic plaque and plaque stability etc\(^4\). Besides these, APN have function in strengthening fatty acid oxidation, anti-inflammatory, anti-insulin resistance, anti-intimal hyperplasia, restraining hepatic glucose output and gluconeogenesis etc.

The results of this study showed that APN level of CHD group was significantly lower than the control group (\( P<0.001 \)), And the results were similar with the finding of scientists at home and abroad, which suggested that the debasement in serum APN may be an important factor in the formation and development of atherosclerotic plaque. APN may play a protective role. In the pathogenesis of CHD the cause which the concentration of APN in CHD decreases have two sides: (1) Decrease of generation: in serum of CHD patients, the concentration of TNF and IL-6 increases, these two factors can make the expression and secretion of adiponectin in adipose tissue to be restrained, and the serum adiponectin concentrations decreased. (2) consumption increase: adiponectin deposits on the inner wall of the injured vascular, and inhibit the inflammation in vascular endothelium, which lead to reduce concentration of serum adiponectin.

Research has shown that\(^6\), CHD patients have hypoadiponectinemia, which may result in the instability of

<table>
<thead>
<tr>
<th>Group</th>
<th>Cases</th>
<th>TC (mmol/L)</th>
<th>TG (mmol/L)</th>
<th>HDL–C (mmol/L)</th>
<th>LDL–C (mmol/L)</th>
<th>GLU (mmol/L)</th>
<th>CRP (mg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHD</td>
<td>80</td>
<td>5.09±0.55</td>
<td>2.33±0.40</td>
<td>1.24±0.04</td>
<td>2.80±0.52</td>
<td>5.36±0.61</td>
<td>3.93±0.32</td>
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<tr>
<td>Control group</td>
<td>30</td>
<td>3.92±0.16</td>
<td>1.55±0.06</td>
<td>1.46±0.05</td>
<td>2.62±0.08</td>
<td>0.48±0.11</td>
<td>2.68±0.15</td>
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<tr>
<td>( t )-test</td>
<td>14.64</td>
<td>13.67</td>
<td>-27.67</td>
<td>2.42</td>
<td>55.92</td>
<td>25.87</td>
<td></td>
</tr>
<tr>
<td>( P )-test</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td>&lt;0.05</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td></td>
</tr>
</tbody>
</table>

Note: TC: total cholesterol, TG: triglyceride, HDL–C: high density lipoprotein cholesterol, LDL–C: low density lipoprotein cholesterol, GLU: blood glucose, CRP: C–reactive protein.
Adiponectin (APN) has some action, such as regulation of glucose and lipid metabolism, decreasing insulin resistance, anti-inflammatory and anti-atherosclerosis. APN level of CHD group was significantly lower than the control group, which show APN level Close related to the occurrence and development of coronary heart disease. It helps to reveal the pathogenesis of Coronary atherosclerotic heart disease, and further explains that the APN can be used as a protective factor for coronary heart disease, and predicts the occurrence and development of coronary atherosclerosis, and evaluate whether its condition is or not stable. To clinical, adiponectin can provide a new direction for the treatment of cardiovascular diseases.

References