The Relationship of Emotional Arousal with the Level of Acetyl Cholinesterase and Lactic Acid in Young Basketball Players

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Abstract

The study of the relationship between emotional arousal and the enzyme acetyl cholinesterase in terms of (acid lactic acid) in young basketball players is of great importance which has played a large role in the direction of the researchers towards such a study. The problem of research was that the basketball game of relatively small space The researchers should study the effect of the enzyme acetylcholine in the emotional excitation and lactic acid to achieve the best results. The objectives of the research were to identify the level of emotional arousal, the enzyme acetylcholinesterase and the level of lactic acid and the level of some of the effectors Physiological studies of young basketball players, and to identify the correlation between the level of emotional arousal and the enzyme acetylcholine acetate and lactic acid for young basketball players, the researchers used the descriptive method in a method of surveying and correlative studies to suit the nature of the problem, the players of the Middle and South Euphrates basketball players participating in The Premier League for the sports season 2016-2017, the nine clubs (Basrah, Maysan, Muthanna, Wasit, Dhiqar, Rafidain, Solidarity, Babylon and Karbala). The sample was selected in a simple random way, (20) players (10) for the Sports Solidarity Club and (10) for the Rafidain Sports Club. The researchers used the following tests: First: to measure the level of emotional arousal, second: biochemical variables, The concentration of lactic acid, measured the concentration of acetylcholine enzyme, and the researchers concluded the high level of emotional arousal of players as a result of the impact of psychological factor. Decreased action of the enzyme acetyl cholinesterase due to the concentration of lactic acid in the muscle, which leads to slow work and sending instructions Increase the proportion of lactic acid in the muscles as a result of the high level of emotional arousal and recommended the adoption of the results of research and use by basketball coaches to know the psychological effects of physiological basketball players. Attention to the psychological preparation of the players in the course of the training along with the physical numbers and skills and plans because of its importance in its reflection on the physical and physiological aspect and therefore on performance. To establish a department for sports medicine in faculties of physical education and sports sciences and provide all specialized devices in order to facilitate the task of conducting research and studies. Conduct research and similar studies by researchers to standardize and determine standard levels of emotional arousal scores on individual and group games.

Keywords: Emotional arousal, Acetyl cholinesterase, Lactic acid and basketball.

Introduction

The emotional arousal of the main factors have a direct impact on the level of performance of coaches and players because they do not go at one pace, but they are high at times and sometimes low for many reasons, and lactic acid from the acids, which adversely affect the work of muscles in the case of accumulation, which leads to the negative impact on work Muscular, and acetylcholine are a chemical found in the vesicles that connect the nerve signals from the cell prior to the network to the sensitive spots located on the cell after the network and this article is one of the types of neurotransmitters that are released in the chemical clasp, Lin esterase is sorted from the liver cells and expressed the effectiveness of enzymes by units / liter, as the unit efficiency (U) defines the amount of enzyme which analyzes one Micro mole of material basis per minute when ideal conditions,[1] the importance of this study is to study the relationship between emotional arousal and acetyl cholinesterase (Lactic acid) in young basketball players. The problem of research was that the basketball game was a small
space game. The researchers studied the effect of the enzyme stylenolen in the emotional excitation and lactic acid to achieve the best results, and the objectives of the research to identify the level of emotional arousal and the enzyme acetylcholine lactic acid level and acid level of some physiological variables of the basketball players young people, and to identify the correlation between the level of emotional arousal and the enzyme acetylcholine lactic acid for young basketball players.

**Practical Part**

**The Procedures of Field Research**

The researchers used the descriptive method in the method of surveying and associative studies to suit the nature of the problem. The players of the Middle and South Euphrates basketball clubs participating in the Premier League for the sports season 2016-2017, the nine clubs are (Basra, Maysan, Muthanna, Wasit, Dhiqar, Rafidain, Solidarity, Babil and Karbala) The sample of the research was simple random way, represented by the players of Al Tadamun Sports Club in Najaf and Al-Rafidain Sports Club in Al-Qadisiyah Governorate, which numbered (20) players (10) for Al-Tadamon Sports Club and 10 for Al-Rafidain Sports Club.

**The Tests**

**Measure Emotional Arousal Level**

The researchers used the emotional arousal scale prepared by Issam Mohammed Abdul Reda and mastered by Alia Hamid Abdul Abbas. The scale consisted of (31) paragraphs by calculating the total number of scores obtained by each player by answering each paragraph of the scale, So that the highest possible value on the game to be obtained is (63) degrees and the lowest value is (31) degrees on the scale, and presented to a group of experts and specialists in the field of sports psychology and testing and measurement to express their views and suggestions on the validity of paragraphs of the scale and suitability to the same level search.

**Biochemical Variables**

**Method of Measuring Lactic Acid Concentration**

The lactic acid is measured by the lactic prom meter, which is shown below.

Sterile alcohol is placed on one of the fingers of the athlete. The needle is pricked with a special needle. We do not take the first blood exit, but we take the second blood drop and put it on a strip test. After 60 seconds of the device directly.

**Measure the Concentration of Acetylcholine Esterase**

A blood sample was taken by 5 cm (3 cm) of the sample of the study. These blood samples were placed in the test tubes and stored at -20 ° C until the use of these samples of blood. After the blood was withdrawn and transferred to the analysis laboratory, Analyzed by the worksheet that was attached to the pigments of the acetylcholine esterase.

**The Main Experience**

The researchers, in cooperation with the Basketball Sub-Federation in the province of Najaf and under the supervision of the Iraqi Central Basketball Association, held a match between the teams of Al Tadamon Sports Club in Najaf and Rafidain Sports Club from Diwaniyah Governorate. The match was to select the players of the national youth team to participate in an international tournament, was the move to excite the players and increase their interest in the game, and on 17/2/2017 The two teams were called in the closed hall of the Solidarity Sports Club was distributed forms of measuring Emotional excitement on the members of the sample of the main application of (20) players representing the clubs of solidarity sports and Diwaniya sports, in the closed gymnasmium of the solidarity sports club, and then pulled a sample of blood and taken to the laboratory for analysis and extraction levels of functional variables and level (Concentration of lactic acid, which was studied before warm-up, was followed by friendly matches between the two teams and then treated the results statistically.

**Statistical Means**

The Statistical Social Sciences (SPSS)

**Results and Discussion**

The results showed that there was a significant correlation between emotional arousal and both lactic acid and acetylcholinesterase.
Table 1: Shows that there is a significant correlation between emotional arousal and lactic acid and acetyl cholinesterase

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>STD.EV</th>
<th>Emotional arousal</th>
<th>Lactic acid</th>
<th>Acetylcholine esterase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional arousal</td>
<td>49.48</td>
<td>6.52</td>
<td>1</td>
<td>0.58</td>
<td>0.51</td>
</tr>
<tr>
<td>Lactic acid</td>
<td>2.39</td>
<td>0.12</td>
<td>1</td>
<td>0.54</td>
<td>1</td>
</tr>
<tr>
<td>Acetylcholine esterase</td>
<td>311.84</td>
<td>45.93</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Acetyl cholinesterase, which is located at the ends of the nerve cells, is responsible for the end of the nerve signal and the end of the muscle movement after performing its function. When the nerve pathway reaches the end of the axon, the channels of calcium channel through which the calcium ion enters, which is connected to the receptor to produce a neurotransmitter known as acetylcholine to beat the compound in the tangent to attach to its receptors. This results in the opening of sodium channels to enter the sodium into the adjacent cell, thus creating a neurotransmitter in the adjacent cell. The results of the study showed that the level of the enzyme was high in the sample of the study because of the high level of emotional arousal that affected the level of the enzyme, while the lactic acid is "lactic acid is" The final image of anaerobic glycogen consumption (without oxygen), however, increases when performing high-intensity sports activities, or is the final product of glucose-lowering without O2. [2] Many physiological sources indicate that a proportion of lactic acid is present in Blood during rest, despite not doing any physical effort. These sources varied in a fixed figure for this ratio. She also agreed that this percentage increases during physical exertion than during rest. Lactic acid increases significantly during physical exertion, especially in high intensity, as lactic acid accumulates in muscles, causing fatigue, and then moves after a period of time, although the members of the research sample did not do physical work before the measurement process, but the level Lactic acid was relatively high because of a high level of arousal, which increased the energy exchange due to muscle strain.

The researcher attributed the high rate of acetylcholinesterase to the subjects of the research sample due to the intense tension and emotion that the players experienced before the game, which led to a rise in pulse rate that is, excitation Emotionality has a significant impact on functional indicators and this result is consistent with the Solomon s Eclampsia. Emotions are characterized by their association with organic changes and physiological manifestations. These changes are usually different from one emotion to the next, but are often changes in blood circulation and breathing movements,[3]and since the psychological state of importance in the level of performance of players joy, joy, fear, anxiety and tension are all cases of feeling and passes by the player when competing in a competition when this particular competition and is of great importance for players was a final match or competition to
reach. This is what Marwan Abdul Majeed and Mohammed Jassim Al-Yasiri say: “The psychological state of the human being affects the heart rate, especially in cases where the patient is suffering from high blood pressure. Anger, emotion, anxiety and fear [4, 5]. This is consistent with blood pressure. "There is a marked change in blood pressure during stress, where blood pressure is found to increase in general," Mahmoud said. "High arousal is usually accompanied by an increased degree of muscular tension, which results in energy dissipation.

This is what happened to the members of the research sample and through the results of the research we note that the proportion of lactic acid was relatively high before the performance of physical effort, despite the fact that the players are athletes practicing the effectiveness and attributed the researchers cause because of the high degree of emotional arousal, which increases the proportion of acid as the tension and emotion [6].

Conclusions
The high level of emotional arousal of the players as a result of the impact of psychological factor. Decreased action of the enzyme acetylcholinesterase due to the concentration of lactic acid in the muscle, which leads to slow work and sending instructions. Increase in the proportion of lactic acid in the muscles due to the high level of emotional arousal.

Recommendations
The adoption of the results of the search and use by basketball coaches to know the psychological effects of physiological basketball players. Attention to the psychological preparation of the players during the training process along with the physical and skill numbers and my plan because of its importance in its reflection on the physical and physiological aspect of the performance. To establish a department for sports medicine in faculties of physical education and sports sciences and provide all specialized devices in order to facilitate the task of conducting research and studies. Conduct research and similar studies by researchers to standardize and determine standard levels of emotional arousal scores on individual and group games [7].

References