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Abstract Arabic

High-intensity physical exertion and its relationship to increase the proportion of free radicals in blood and their impact on the injuries of some young

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Introduction:

The modern era has witnessed a remarkable development in the field of sports training, high level athletes in various sports and basketball which is considered a major sport that has received a large share of the progress and development in various aspects of legal, technical and tactical fields since its inception to the present day. If we look at game of basketball, we will find it of the games characterized by the performance of physical exertion highly intermittent because the play stops with every whistle of the referee. As the basketball game in quick to shift from defense to attack and vice versa as the basketball player plays attacking and deferring at the sometime and is required to have the ability to jump high using the contractions of muscle strength and speed to reach the highest increases aiming his team to acquise the ball jumping or catching the balls high or dispersed, as well as follow up of attacking and defensive, and throwing while jumping and stability in addition to running at different speed and stopping and changing direction and movements to both sides, forward and backward as well as the performance of technical skills using balls with or without a side of non smpliance with the functions of the individual only. But he has to operate any position of the three positions of play as required by malti-position which come over the match from time to time.

Saad Kamal Taha (2004) referred to the importance to recognize and understand the workers in the field o sports an what happens inside the human body of the variables and functional and chemical response or other changes that occur in responses or to adapt to the body with exercise.

Farouk Abdel Wahab (1998) indicates that our bodes depended on oxygen, although most of the oxygen which enters the human body through inhalation of air from the air is consumed within mitochondria to produce enough energy so that the individual can perform different function.

However approximetely 2% - 5% of the oxygen is free radicals and these radicals are the couse of damaging the cells in the body.

Fridovick (1989) indicates that despite the importance of oxygen in energy production and despite the many bencfits of the body it also has some damaging effects resuting from the fromation of free vadicels (Ros),

which is one of the mast important free radicals produced during the process of rypothensis in the cells (oxygen free Radicals) where the free radicals are formed in all living cells and tissues.

Both cooper (1999) and Kanter (1999) mental that free radicals are a molecule of oxygen (O2), which losses one of the two electrons and becomes active and irritable and if it attakcks the cell and it spoils it and if it attack (DNA) inside the nuackeus with the genetic qualities, it destroys it and changes it composition because this molecule in this case is looking for a missing electron and tries to get it from any other oxygen molecule and losses it quality and so the services of free radicals which is composed and leads to the injury of the body with diseasese and the most important ones are cancer and exposure to premateure aging.

Kanter (1994) emphasises that on exercising the violent sport with excessive lads of the capacity of on individual, the electron falls from an atom of oxygen daring the high incrase of the consumption of oxgen where the increase comes to the or twenty times of the oxgen at rest and this massive injection generates destructive oxygen and during the pactire of sports effeort, the blood turns away from vital organs such as lives, speer, stomach and kidney in case of lack of oxgen and at the end of the effort, the blood returns to it and is a ccompanied the production of huge amount of free radicals (Ros). At the end of the competitions of running a severe lack of oxygen happens in the working muscles and vital organs, and when the player's effort stops, blood rushes to the muscle and organs and produces millions of free radicals.

Research problem and its importance :

The nature of physical pregnancy in basketball is considered combination of degrees of intensity at different stages, that the movements of players raining from walking, banning and changing speeds. Directions and jump. In some cases, the additions of the game play requires extra time or ever more to resolve result for one the two teams increasing the burdon on the plapers.

Abdel Aziz Al Nemr (1992) mentions that the game of basketball reqires exerting eruptions of energy for short times relatively on consecutive periods of

time of 40 minutes, in order to complete the player's game without the fatigue effecting the level of performance so the energy systems for the player must be balanced with power consamption of the muscles.

Biecemeal and other (1998) mention that violent aerobic sports lead to increasing the pressure of oxidation and thus leads to increasing the oxidation processes within Amato kondria as the violent exercises overcome the defence system of antioxidants and is verified through the knowledge and the increase in the proportion of the material of malone bilateral aldehyde and two signs of free radicals in the body.

RG Bloomer (2005) indicates that the greater the amount of free radicals, the ability to penetrate the cell membrane and perpetration into it is larger in case it is small, hence, the damage of which caused the electrolyte cells to reach the mitochondria chromosome, one of the most important sponents of the cell and its destruction. Despite the fact that the cell and its coponents have the protection of self represented in the exertion of some self-antioxidants and the inerease of electrolyte weakens the ability of self-antioxidants and enzymes secreted by the cells until it reaches the end that can not be stood up to these radicals there by enabling access to the cells and lead to their destruction.

Abu ela Abdul Fattah (1999) mentions that the muscle tissue are exposed during the violent training, to some of the tears which cause inflammation and the attracts immune cells and other immune materials to the place of injury and many of these immane substance release oxygen atoms as a kind of mechanisms that kill bacteria and other objects.

Through the above, the researcher sought to address this study, the effect of physical exertion high intensity and its relationship to increase the proportion of free radicals in blood and their impact on the injuries of the yoang. The researcher chose arising basketball player under 16 years old to cond act this study, where the importance of the scientific study is due to explaining some of the problems facing the Mayers from the stress and injuries during the sports season through the physiological and biochemical information of the levels of free radicales and to identify on injurives that occur to the players so as to follow the naining programmes that commensurete with the status of training for the player to avoid the stress, tears, inflammation and increase the level of the body's ability.

Research objectives :

1- The impact of high-intensity physical exertion on some physiological response (pulse at rest and after the effort – blood ptessure; systolic and diastolic – maximum oxygen consumption of absolate and relative) in junior basketall.
2- The impact of high intensity physical exertion on some biochemical variables (binary aldehy de Malone – glutathione – oxidated Geluthanion – lactic acid in rest and after effort) in junior basketball.
3- The impact of increasing the proportion of free radicals and the occurance of some injuriee in junior basketball.

Hypotheses:

1- There are significant differences between the measurement (before and after) in the physiological variables in the research sample.
2- There are significant difference between the measurement (before and after) in the biochemical variables in the research sample.
3- There is a statistically significant relationship between the increase in free radicals and some sports injuries among a sample research.

Search procedures:

Research Methodology:

The researcher used the experimental method which is suitable for the nature of the research and the research used the experimental desing with the before and after measurements for the experimental group.

The research sample:

The researches selected a sample in the delibereate manner of the players at the sports, club's junior of meet Ghamr under 16 years old and negistered in the records of the Egyption Federation of Basketball for the sports season 2011/2012m, who counted (18) your players, where the researcher conducts before and after measurement on (13) players who are regular in the application of the basic experimental while (3) players were exempted from the sample of the basic researc during the application of experience in the third and fourth weeks because they were injured with cramp diagnosed by the team doctor. Also, the researcher chose (5) players for the transaction of the scientific tests used in the research.

Exploratory experiment:

The researcher conducted the experimental during the exploraotory period from the day 1/2/2011 to 7/2/2011 on a sample of the same research community estimated (5) players.

The before measurement :

The researcher conducted the before measurments between 25/2/2011 and 26/2/2011.

The basic experiment:

The basic experiment was performed by applying the proposed training programmed to members of the research jample in the period from Saturday 26/2/2011 to Thursday 2/4/2011 for a period of 8 weeks.

The after measurements :

The after measurements were conducted on the members of research sample using the same foods and procedure at the same conditions of the before measurements during the period from Thursday 21/4/2011 to Friday 22/4/2001

Statistical Treatments:

The researcher used the following statistical treatments:

- The arithmetic average.
- Standard deviation (p)
- T "test"
- Improvement vatios
- Curvature coefficient
- Kurtosis coefficient.
- The mediator (t)
- The correlation coefficient.

Conclusions and Recommendations:

Conclusions:

In the light of the findings of the researcher and the research sample, its characteristics, the methodology used and the statistical treatments, the researcher can reach the following.

Conclusions:

- the proposed training programme led to the high concentration of the bilateral Malone aldehyde in the after measurement than the before measurement (56.25 Nanomul/ml), and in the after measure (91.39 Nanomul/ml), owing to the fact that the physical exertion high intensity led to the increased consumption of oxygen which led to an increase in the level of Malone aldehyde in the after measurement than the before measurement.
- Proposed training programme led to high vate of the reductased glatathione in the after measurement more than the before measurement where it is estimated (40.95 micro mol) in the before measurement and in the after measurement estimated (68.58 micro mol) and that's because the training programmed led to increasing the level of the player's training case which led to improving the muscle oxidation activity which leads to increasing the capacity of antioxidants in the body to prevent the divesting impact of the free radicals and this explaine the high rate of reeducated glutathione.
- Proposed training programme led to a high rate of the oxidized glutathione in the after measurement more than the before measurement as it is estimated (44.07 micromol) and in the after measurement estimater (73.60 micromole) and that's because the training programmed led to increasing the level of the player's training case which led to improving the capacity of the antioxidants in the body where the production of the reductesed glutations increases which helps to get ride of the atoms of oxygen free radicals and changes into oxidized glutathione and that explains the high rate of the oxidized glutations.
- Training programme led to on improvement in the level of lactic acid at rest and after the effort in the after measurment more than the before

measurement as the proportion of rest in the before measurement (1.411 ml/mol) and in the after measurment (1.307 ml/mol) and the proportion after the effect in the before measurement estimeted (11.21 ml/mol) and that's because the training programme led to improving the training case and improving the capacity and efficiency the vital substance that help to getrid of lactic acid as well as the body's ability to convert to protein or oxidizing it to carbon dioxide and water.

- Training programme led to an improvement in physiological variables under research in the after measurement more than the before measurement where the pulse vate at rest in the before measurement (72.50 p/mn) and in the after measurement (68.50 p/mn) and in the palse after the effort of the before measurement (186 p/mn) and in the after measurement (180 p/mn) and its is estimated in systolic blood pressure in the before measurement (123.70 mm/Hg) and in the after measurement (118.70 mm/Hg) and in the maximum of proportional consumption of oxygen in the before measurement (3.41 L/mn) and in the after measurement (4.03 L/Mn) and in the maximum of velative consumption of oxygen in the before measurement (3.1607 ml/kg/ Mn) and in the after measurement (39.017 ml/kg/Mn) due 70 the fact that the training programme led to the improvement of the training case and the high rate of the players' fanctionality and that led to increasing the volume and strengthening the aeart wall which led to increasing the efficiency of the heavt motion which increase the oxygen pamped into the working muscles and increasing the ability of tissues to extract oxygen to increase to person's ability to continue the physical effort.
- There is correlative relationship between the increase in free radicals and the occurance of the torn muscle estimated (0.998/Nano /nl) as the increase in free vadicals leads to the ability of antioxidants which result in a defect in the protection mechanisms and mechanisms of tissue repair leading to damaging the mascle cells.

Recommendations:

According to the conclusions which were found out, the researcher recommends the following:

1- Sapporting the training programmes with antioxidants either like foods or medical products.
2- Carrying out similar studies by using antioxidants and finding out their effects on decreasing the occurance of tinjury.
3- Carrying out more similar studies in different team sports.
4- The mecessity of adapting the programmes (Strength – volame) to the principle of the individual difference and by using the palse formula so that the training can not be a cause of the big increase in free radicals and injuries occarance.
5- Taking into consideration the level of indicators and antioxidants when choosing the young to include then in the training programmes to raise the sports standards.