

Research Article**Analysis of Level of Antioxidants in Health Aspects of Dental Treatment by Using General Anesthesia****¹Saadatullah, ²Hafiz Qamar Habib
and ³Tayyaba Hameed**¹Dental Surgeon at Tehsil Head Quarter Hospital Wazirabad, Gujranwala²Senior Dental Surgeon at Tehsil Head Quarter Hospital, Wazirabad, Gujranwala³Dental Surgeon at District Head Quarter Hospital, Lodhran**ABSTRACT**

Introduction: The basic purpose of giving anesthesia is to make a person or child senseless so that they can endure the pain during oral health maintenance, whether it is by means of surgery or removal of dental carries.

Objectives: The main objective of our study is to analyze the health aspects of dental treatment by using general anesthesia.

Methodology: This study was conducted according to the rules and regulations of THQ hospital Wazirabad, Gujrat. The study was conducted during jan 2016 to august 2016. For this purpose we select the 50 patients who was come at the hospital for oral treatment. They want general anesthesia because they do not some time bear pain. After that we take 5cc blood with the permission of patients for the purpose of analysis of level of antioxidants.

Results: Mean values of investigated parameters (SOD and catalatic activities, lipid peroxidation and glutathione levels) upon treatment are summarized in Table 1. Our data show that activity of SOD and levels of MDA and GSH are elevated in samples collected from patients subjected to drug administration. Interestingly, activity of catalases decreased by the value of 0.43 ± 0.39 U/ml (after 5 minutes of anesthesia).

Conclusion: It is concluded that people who used general anesthesia as a pain killer suffer more from high level of antioxidants.

Keywords: Antioxidants, Levels, Anesthesia, Dental

INTRODUCTION

Anesthesia is a term that states “temporary loss of sensation on induction”. The basic purpose of giving anesthesia is to make a person or child senseless so that they can endure the pain during oral health maintenance, whether it is by means of surgery or removal of dental carries. As far as, mouth is concern, it is the most sensitive part of human body. It means it have plenty of veins with high blood supply because of enormous amount of energy utilization during a day in terms of eating, speaking and swallowing the food. When children or differently able persons are intended for a dental treatment, general anesthesia is given in a fixed proportion to the oral part so that they may not sense any pain and feel less anxiety.¹ There are

positive as well as negative impacts of general anesthesia on one’s health, negative aspect is that the general anesthesia is not recommended in most of the cases in which the patient have high blood pressure or a disorder that may accelerate on giving anesthesia. There is always the risk of complication such as laryngospasm which results due to suppression of central nervous system and defensive reflex actions. Contrary to this, advantage of anesthesia is that it has obligative success rate and it helps in cure when general health of oral cavity is concern.² People with negative experience of dental care or treatment often become very anxious of cure and uncooperative. General anesthesia is considered as

best factor due to its role in minimization of psychological stress within or without environmental factors. In most cases, children have caries which can be cured in a sequence of restorative procedures. Studies showed that the number of children treated by using general anesthesia depends directly on the number of children in a population with severe dental decay or disorders.³ Moreover, literature have also reported that use of general anesthesia also effects positively with less pain experience, improved abilities of eating and sleeping, and social impact. In short, due to use of general anesthesia, the portion of brain with reduced load of work and blood results in activation of hypothalamus with improved sleeping and social cycles.⁴

Those people that undergo treatment of oral diseases with the induction of general anesthesia either become fearless or enlarged fear due to experience of their treatment. Therefore, there has always been a survey to get the opinions of people have experienced general anesthesia in their treatment. There is always increasing the demand of using general anesthesia in oral as well as other treatment. As, some diseases may result in ear or nose as well, and there is a link between ear, nose and throat, therefore, use of general anesthesia may result in temporary blockage of ear or may result in dizziness or numbness of any of these part during treatment and after prognosis. Therefore, the survey is done to check the public opinion on use of anesthesia as well as its impact on their health after use.⁵

OBJECTIVES

The main objective of our study is to analyze the health aspects of dental treatment by using general anesthesia.

METHODOLOGY: This study was conducted according to the rules and regulations of THQ

Table 01: Analysis of Total antioxidants in dental treatment after using general anesthesia

No.of Observation	Analysis of blood	Normal $\mu\text{g/mL}$	Before treatment $\mu\text{g/mL}$	After treatment(5min) $\mu\text{g/mL}$	After treatment(15min) $\mu\text{g/mL}$	After treatment(60min) $\mu\text{g/mL}$
01	SOD	0.32±0.00	0.33±0.23	0.39±0.00	0.45±0.19	0.51±0.21
02	CAT	4.16±0.00	0.90±0.00	0.43±0.39	0.30±0.24	0.19±0.18
03	GSH	1.89±0.00	2.48±1.29	3.23±0.03	4.92±0.57	5.64±0.55

hospital Wazirabad, Gujrat. The study was conducted during jan 2016 to august 2016. For this purpose we select the 50 patients who was come at the hospital for oral treatment. They want general anesthesia because they do not some time bear pain. After that we take 5cc blood with the permission of patients for the purpose of analysis of level of antioxidants.

Collection of blood

Blood samples (5 ml) were taken from vein before anesthesia (0 min), and 5 min, 30 min and 60 min after anesthesia.

Processing of blood sample

Blood was centrifuged at 4000 rpm for 10 minutes and serum was separated. Blood samples were collected into EDTA tubes. Subsequently, indomethacin and butylated hydroxytoluene were added into the plasma samples. Blood samples werestored at -80°C.

STATISTICAL ANALYSIS

Statistical analyses (Anova Test and Post Hoc) were performed using the SPSS software program (17.0). All results were expressed as the mean \pm standard deviation (SD). P value below 0.05 was considered to be statistically significant.

RESULTS

Mean values of investigated parameters (SOD and catalytic activities, lipid peroxidation and glutathione levels) upon treatment are summarized in Table 1. Our data show that activity of SOD and levels of MDA and GSH are elevated in samples collected from patients subjected to drug administration. Interestingly, activity of catalases decreased by the value of 0.43 ± 0.39 U/ml (after 5 minutes of anesthesia). The levels of MDA slightly increased at 5 min time point after anesthesia.

04	MDA	2.35±0.00	4.26±0.00	4.95±0.97	5.13±1.06	6.58±0.00
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DISCUSSION

This study focuses on the investigating the linkage between diabetes, diet-health behavior, and health outcomes that are frequently discussed in the context of diabetes management, public health, and diet quality and BMI.⁶ It is realized that carbohydrates are the supplements that most influence blood glucose levels.⁷ Be that as it may, up to now there is no agreement prove about the perfect measure of carbohydrate intake for individuals with diabetes. Truth be told, in the present investigation, the carbohydrate utilization did not vary between the unhealthy and healthy gathering.⁸ The relationship between healthy eating pattern and glycemic control could be better clarified by the nature of carbohydrate intake than the measure of this macronutrient. In concurrence with this, we exhibited a higher utilization of entire carbohydrates, natural products, and vegetables in this gathering of patients. As an outcome, these patients devoured diets with a lower glycemic record and glycemic stack esteems as contrasted and patients in the unhealthy eating pattern. Presently, diets with a low glycemic list have been related with enhanced glycemic control.⁹

Another supplement likely identified with the best watched glycemic control in our investigation is dietary fiber. In like manner, in our patients in the healthy eating pattern, a higher aggregate, dissolvable, and insoluble fiber utilization was watched. It has just been exhibited that a high fiber intake was related with better glycemic control in patients with diabetes. In any case, up to now, the advantageous effects of fiber intake, particularly solvent fibers, couldn't be detached from the effects of glycemic list and glycemic stack in light of the fact that most foods that have a low glycemic file additionally have a high fiber content.¹⁰

Most of the studies in pediatric patients stress on the utilization of general anesthesia for the treatment of anxious, fearful, no cooperative children along with children with special health care needs. Studies also advocate that such

procedures should be carried out in a hospital-based setup rather than a private clinic.¹¹ Also, the patient's age, grade of its uncooperative behavior along with complete medical history decides the need for general anesthesia. Therefore, improving the behavior of the pediatric patient toward the dental treatment can minimize the need for general anesthesia. Hence, we evaluated the pediatric patients with and without mental retardation, who underwent dental treatment under general anesthesia.¹²⁻¹³

CONCLUSION

It is concluded that people who used general anesthesia as a pain killer suffer more from high level of antioxidants.

AUTHOR'S CONTRIBUTION

All the authors contributed equally. Dr. Saadat conceived of the presented idea and do all the lab work and carried out the experiment with other co-authors. Dr. Qamar developed the theory and performed the computations. Dr. Tayyaba supervised the findings of this work and Dr Saadat and Dr Qamar developed the theoretical formalism, performed the analytic calculations and performed the numerical simulations. All the authors contributed to the final version of the manuscript.

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