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## **Dynamics of indicators of a functional condition of a liver at patients with the Odontogenous Pyoinflammatory diseases of maxillofacial area complicated by a sepsis**

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### **Abstract**

The biochemical blood analysis of 89 patients with wide phlegmons of maxillofacial areas, complicated by a sepsis for the purpose of assessment of extent of disturbance of a functional condition of a liver is conducted. Studied contents in a blood of cytolytic enzymes of an alaninaminotransferaza (ALT) and an aspartate aminotransferase (AST). It is established that at the widespread phlegmons of maxillofacial area complicated by a sepsis the concentration augmentation in blood serum of transaminases is observed, and degree of their augmentation corresponds to the standard criteria of expression of pathological process. Including in a complex of medical actions of intravenous laser radiation of a blood in a combination with sodium hypochlorite, especially a combination of ultra-violet radiation of a blood to a double irrigation of wounds sodium hypochlorite contributes to normalization of indicators the cytolytic enzymes by 6-7 days from an initiation of treatment.

**Keywords:** odontogenous pyo-inflammatory diseases, sepsis, maxilla- facial phlegmon

### **Introduction**

At patients with acute odontogenous pyoinflammatory processes of maxillofacial area complicated by a sepsis often functions of internals and their systems, including a liver [2, 4, 5, 8] are broken that often leads to serious disorders of a regulation of metabolic processes and change of a metabolism in an organism in general [7, 9, 10, 12]. These circumstances dictate need of carrying out complex assessment of the general and local disorders, and also development of new pathogenetically reasonable effective methods of treatment of acute odontogenous pyoinflammatory diseases of maxillofacial area with the complicated current, such patients promoting a favorable outcome at after treatment [1, 3, 6, 11].

**Research objective:** To study a functional condition of a liver at patients with the acute odontogenous pyoinflammatory processes of maxillofacial area complicated by a sepsis by test of definition in a blood of maintenance of an alaninaminotransferaza (ALT), an aspartate aminotransferase (nuclear heating plant) when performing complex etiopathogenetic therapy.

**Material and methods of a research:** The research was conducted with participation of 89 patients aged from 27 up to 72 years which came according to urgent indications to specialized maxillofacial unit of a versatile hospital with the widespread odontogenous phlegmons of maxillofacial area complicated by a sepsis (table. 1).

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**Table 1:** Distribution of patients on gender and age, persons.

Group of a research		Age						total
		Young 18-44 years		Average 45-59 years		Elderly and senile 60 and more years		
		M	W	M	W	M	w	
Control group		5	5	5	5	5	5	30
Primary group	1 subgroup of a research	2	5	4	3	1	2	17
	2 subgroup of a research	5	2	3	4	3	2	19
	3 subgroup of a research	3	2	1	3	-	-	9
	4 subgroup of a research	3	3	4	3	-	1	14

The control group included 30 people, aged from 21 up to 72 years without symptoms of acute odontogenous inflammatory diseases and changes from internals.

Depending on the carried-out treatment patients of the main group were divided into 4 subgroups. To all patients of the main group of a research the standard complex therapy of a basic disease was carried out. In addition, the patient of 1 subgroup carried out a daily disposable irrigation of a postoperative wound by freshly cooked solution of sodium hypochlorite, in the second subgroup in a complex of treatment included the intravenous laser radiation of a blood (ILRB), in the third subgroup the daily two times irrigation of a postoperative wound was carried out by freshly cooked solution of sodium hypochlorite, in the 4th subgroup besides a two times irrigation sodium hypochlorite applied ultraviolet radiation of a blood (UVRB). From 17 patients of the first subgroup at the 4th pathological process extended to two, and at 13 to three the cells of space. The second subgroup was made by 19 patients. At 2 of them phlegmon extended to two and at 17 to three anatomic-topographical areas of the person. Among 9 patients allocated in the third subgroup at 5-acute pyoinflammatory process occupied three and at 4 more than three cellular of spaces. The fourth subgroup was made 14 are sick among which occupied three the 6th phlegmon, and at 8 patients - 4 and more anatomic-topographical areas of the person. At all patients in day of entering the general state was regarded as serious and extremely serious. After preliminary preparation the surgical grant in volume of opening and drainage the near gnathic of phlegmons was carried out. Operations were performed under intravenous anesthesia. Along with surgical treatment carried out the complex intensive care including the antibacterial, desensitizing, disintoxication, immune corrective and antiinflammatory drugs.

The maintenance of ALT and nuclear heating plant determined by the standard technique on a biochemical autoanalyzer of Impact-400 (Gillord, USA) by means of standard sets. The obtained data were compared to indicators of faces of control group and entered in tables and databases of a software package Microsoft Access. Statistical processing was made with use of a software package of Statistica for Windows v. 7.0.

## Results and Discussion

At patients with the complicated course of widespread phlegmons of maxillofacial area authentically expressed rising of maintenance of ALT and nuclear heating plant in blood serum became perceptible. At 17 patients with widespread phlegmons of maxillofacial area (1 group of a research) complicated by a sepsis, in day of entering in a hospital rising of ALT by 8,6 times ( $p < 0,01$ ), nuclear heating plant - in 10,1 times ( $p < 0,001$ ) in comparison with indicators of healthy faces of control group (tab. 2) was observed. At a

repeated research for the 6-7th days of complex treatment with a disposable irrigation of wounds freshly cooked solution of sodium hypochlorite noted depression of the studied indicators, but they all the same were above values of control group in 5,3 ( $p < 0,05$ ) and by 7,7 times ( $p < 0,05$ ) respectively. At research ALT and nuclear Heating Plant at the final stage of complex treatment further depression is noted though all of them still considerably exceeded indicators of control group ( $p < 0,05$ ). In the second group of a research (at 19 patients with the widespread phlegmons of maxillofacial area complicated by a sepsis) the maintenance of ALT and nuclear heating plant in day of entering was reliable above in 8,7 controls and by 12,5 times respectively. For the 6-7th days of complex treatment with including in a complex courses of the intravenous laser radiation of a blood (ILRB) and a disposable irrigation of wounds solution of sodium hypochlorite observed appreciable depression of concentration of ALT and nuclear heating plant in blood serum in comparison with the previous term of a research, but they in 4,8 ( $p < 0,05$ ) and by 10,6 times ( $p < 0,001$ ) respectively, exceeded indicators of control group. Further treatment of patients with use with VLOK and a local irrigation of wounds with solution of sodium hypochlorite promoted distinct reliable depression of maintenance of ALT and nuclear heating plant, but it was higher, than at patients of control group. In the third group of a research (9 patients with the widespread phlegmons of maxillofacial area complicated by a severe form of a sepsis) when entering blood ALT nuclear heating plant indicators in 9, 4 and by 3,1 times, respectively, exceeded values of control group. In this group of patients besides complex therapy the two times irrigation of a wound surface was applied by freshly cooked solution of sodium hypochlorite. At a repeated blood analysis for the 6-7th days and at the end of complex treatment (for 9-10 days) in this group of ALT and nuclear Heating Plant value progressively decreased, but were much higher than indicators of control group ( $p < 0,001$ ). At a research of concentration of cytolytic enzymes in blood serum in the 4th studied group (to 14 patients with the widespread phlegmons of maxillofacial area complicated by a severe form of a sepsis) authentically expressed rising of indicators of maintenance of ALT in 9, 7 and nuclear heating plant by 13,6 times in comparison with indicators of control group is also taped. At a repeated research for the 6-7th days of complex treatment with including of a double irrigation of wounds solution of sodium hypochlorite and ultra-violet radiation of a blood (UVRB) noted distinct depression of concentration of ALT and nuclear heating plant which slightly exceeded indicators of control group ( $p < 0,05$ ). Continuation of complex therapy promoted further depression of maintenance of ALT and nuclear heating plant, and by the time of an extract didn't differ from indicators of control group ( $p < 0,05$ ).

**Table 2:** Studying of dynamics of maintenance alanine and asparagine transaminases in blood serum in the course of complex treatment of phlegmons of maxillofacial area

Group of patients		Observation terms	ALT	Nuclear heating plant
Control group		Healthy	0,40±0,022	0,20±0,012
Basic group	1 subgroup	Basic data	3,45±0,195***	2,02±0,072***
		6-7 days	2,10±0,147*** <sup>ллл</sup>	1,53±0,048*** <sup>ллл</sup>
		At an extract	1 3±0 072*** <sup>ллллloo°</sup>	1,11±0,038*** <sup>ллллloo°</sup>
	2 subgroup	Basic data	3,49±0,128***	2,50±0,062***
		6-7th days	1,90±0,066*** <sup>ллл</sup>	2,12±0,054*** <sup>ллл</sup>
		At an extract	0,80±0,035*** <sup>ллллloo°</sup>	0,4±0,014* * <sup>ллллloo°</sup>
	3 subgroup	Basic data	3,75±0,097***	2,62±0,075***
		6-7th days	2,54±0,044*** <sup>ллл</sup>	1,54±0,063*** <sup>ллл</sup>
		At an extract	9 11±0 034*** <sup>ллллloo°</sup>	1,01±0,029*** <sup>ллллloo°</sup>
	4 subgroup	Basic data	3,86±0,073***	2,71±0,073***
		6-7th days	0,59±0,013*** <sup>ллллloo°</sup>	0,26±0,008*** <sup>ллл</sup>
		At an extract	0,40±0,010 <sup>ллл</sup>	0,22±0,008 <sup>лллloo°</sup>

Note: \* - distinctions rather this groups of healthy are significant (\* -  $p<0,05$ , \*\* -  $p<0,01$ , \*\*\* -  $p<0,001$ ); <sup>л</sup>- distinctions of rather basic data are significant (<sup>л</sup>-  $p<0,05$ , <sup>ллл</sup>-  $p<0,01$ , <sup>лллл</sup>-  $p<0,001$ ); <sup>o</sup> - distinctions are significant rather these 6-7 days (<sup>o</sup> -  $p<0,05$ , <sup>oo</sup> -  $p<0,01$ , <sup>ooo</sup>- $p<0,001$ )

### Conclusion

Thus, increase in concentration transaminases by ALT and nuclear heating plant in blood serums is observed at widespread phlegmons of the maxillofacial area complicated by sepsis, extent of their increase corresponds to the standard criteria of expressiveness of pathological process. Inclusion in a complex of medical actions of ILRB in combinations with one-time irrigation of wounds promotes distinct decrease in concentration of cytolytic enzymes in blood serums. At a combination of complex therapy by double irrigation of wounds solution of sodium hypochlorite and UVRBU the maintenance of ALT and nuclear heating plant for the 6-7th days decrease to control indicators.

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