



Respiratory Dysfunction of Patients with Severe Burn Injury

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ABSTRACT

In the structure of multiple organ disorders, complications and causes of mortality in burn disease, respiratory pathology occupies one of the leading places (1,2,12), while combined inhalation injury (IT), which is observed in 30-40% of burn patients, significantly aggravates course, is accompanied by a more frequent development of pulmonary complications, higher mortality and is the main cause of respiratory failure (3,6,8,11,13,16). The most important factors that damage the mucous membrane of the respiratory tract during IT are a variety of combustion products in an enclosed space. The developing mucosal edema is primarily due to such mediators as histamine, bradykinin, prostacyclin, and bronchospasm and increased pulmonary vascular resistance are due to the release of thromboxane and complement components (8,15).

Keywords:

Multiple organ disorders, burn disease, inhalation injury.

Acute respiratory failure in burned people, regardless of the cause that caused it, often leads to multiple organ failure and mortality. Respiratory failure is one of the most common forms of organ failure in PON syndrome and, progressively, leads to death in combination with dysfunction of other organs, regardless of the presence of inhalation trauma (12,16). The disorder of the respiratory function of the lungs, in turn, disrupts the nutrition of alveolar tissue, reduces the production of surfactant, contributing to the development of atelectasis (4,14), increases venous blood bypass grafting (2,5). With burn disease, along with respiratory disorders, non-respiratory functions of the lungs suffer: purification of the blood from mechanical impurities and their enzymatic destruction, participation in hemostasis and fibrinolysis, metabolism of water and electrolytes, metabolism of proteins, fats, biologically active substances (1,7,9,10).

Purpose of the study: Study of the pathology of the respiratory system in burn disease

Materials and research methods: For the period 2017-2021, 2136 patients were diagnosed in the department of jointology of the Bukhara branch of the RNCMP. Of these, 156 patients showed a violation of the function of the respiratory system. Of these, 96 (61.5) women, 60 men (38.5). The age of the patients ranged from 2 to 70 years. Franc index (IF) is more than 60-90 units in 76 (48.7) patients, IF more than 90 units in 80 (51.3%) patients. 55% have burns with flame, 43% boiling water, 2% electric trauma.. patients were admitted in the period of burn shock 50 (32%), in the period of toxemia 79 (50.6%) and septicotemia 27 (17.4%).) To study respiratory function disorders from the point of view of systemic inflammatory (SVO), we analyzed the clinical indicator tachypny and features of the X-ray picture of the lungs (Table No. 1). Chest X-ray is an important diagnostic method for monitoring pulmonary complications and evaluating treatment from 1 day of burn injury (493).

Results and discussions: First of all, it was noted that among 156 patients with identified disorders of the respiratory system, the overwhelming number (128 patients) with tachypnea 21-24 at 1 minute had signs of venous pulmonary fullness, expressed in varying degrees and indicating an increase in pressure in the pulmonary artery system. According to the literature, the pressure in the pulmonary artery is increased during all periods of burn disease, depending on the severity of the burn disease, and the greatest pressure rise was found in the stages of shock and toxemia with a gradual decrease by the time burn wounds heal (11,16). In the genesis of increased pulmonary

resistance, hypertension of the pulmonary circulation, impaired perfusion and gas exchange, hyperserotoninemia plays a role, causing vasoconstriction and narrowing of the bronchi (2,4). The development of venous fullness, and with it tachypnea in the burned, we associate with the manifestations of systemic disorders of microcirculation and capillary-alveolar diffusion of blood gases against the background of developed SVO. Table 1

Distribution of patients with varying severity of burn injury in accordance with radiographic changes in the lungs

Pathological Changes	Number of patients in g] ruppah				Total
	1-18	II-40	III - 56	IV-42	
Venous fullness	7	30	52	39	128
Interstitial edema	-	3	10	10	23
Alveolar edema	-	1	3	6	10
ARDSV	-	-	1	2	3
Bacterial pneumonia	-	1	8	11	20
Infarction pneumonia	1	5	6	3	15
Atelectasis	1	3	8	6	18
Diaphragm dome disposition	-	5	7	8	20
Pneumothorax	-	-	1	-	1

Of most patients, signs of venous fullness appeared in 1-2 days and persisted for 7-14 days, and in some patients much longer during the SVO, which correlated with the severity of the burn injury. With an uncomplicated course of burn disease, venous fullness according to radiography data gradually decreased and disappeared, with complicated - appeared again or intensified, while some patients developed signs of increased vascular permeability in the microvessels of the lungs, xg^o was manifested by interstitial or even alveolar edema. Among 128 patients, more than half (5, 8, 11) of tachypic combined only with circulatory disorders in the lungs. Signs of increased vascular permeability against the background of venous fullness in the form of interstitial and alveolar pulmonary edema were detected in 23 and 10 patients respectively. An additional negative role in the formation of edema can be played by excessive infusion

therapy.

Conclusions: We suggest that interstitial edema, due to a systemic increase in vascular permeability in SVO, occurred in a larger number of patients with tachypnoe, but its severity was minimal and insufficient to detect this sign on radiographs. More pronounced edema of the interstitium, and even more so sweating of edematous fluid into the alveoli caused more severe dysfunction and even respiratory failure.

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