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Results of "Pneumonia Inspair" multicentre research in Georgian Critical Care Medicine Clinic
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Here are studied 15 cases of nosocomial infection in Critical Care Medicine Clinic. Patients were not intubated until development of pneumonia and did not have artificial lung ventilation, including non-invasion method. treatment process of some critical patients becomes complicated because of nosocomial infection. This infection worsens a clinical image, make treatment more expensive and results in bad outcome. In the development of nosocomial pneumonia hidden micro aspirations of bronchial tree's gastric content may participate that must be caused by disorganization of sphincter of cardial parts of stomach and work of epiglottis. Aiding factor of nosocomial pneumonia development can be the image of secondary immune deficiency that occurs because of old age, general and accompanying diseases and also because of critical conditions.At the time of nosocomial pneumonia on the background of antibacterial therapy microbial flora of phlegm changes and sensitivity of them towards antibiotics."malignant" ongoing of nosocomial infection can be confirmed after discover of CRP, procalcitonine and IL-6 concentrations are decreased and "non-malignant" ongoing is marked by increase in IL-2 and IL-10 concentrations.In critical patients electric stimulation of bone marrow promotes discover of stem cells in peripheral blood and fastens regenerative-reparative processes.

Key Words: Nosocomial pneumonia, Immune deficiency , Critical patients.

Introduction: this work is conducted under the aegis of European Society of Intensive and critical Care Medicine and represent the fragment of the multicentre research that was conducted in Georgian Critical Care Medicine Institute. In the mentioned research many countries of Europe take part in and the purpose is to show updated information about nosocomial pneumonia in critical medicine clinics. This information will promote in elaboration of an optimal management of

pneumonia and to improve an outcome of pathologies. The research was implemented in 1.01-1.06, 2016 and it was allowed by Georgian State Ethic Commission of Disease control .

Materials and methods: during the research in the Georgian Critical Care Medicine Institute there was revealed 15 cases of nosocomial pneumonia that was 4,9% of patients. Under the term of nosocomial pneumonia we considered pneumonia which was developed in clinic after 48 hours from admission of a patient. Also in the research there were included such patients who were not intubated before pneumonia and were not on Artificial lung ventilation, including non-invasive ventilation. 10(67%) were females and 5 (33,0%) males. Age of patient was between 50-70 years. 8 were village habitants and 7-of city. 5 patients were placed in critical care medicine clinic immediately and 10 of them were taken from other clinics. Critical condition was associated with 3 stage cardiac failure in 7 patients, in 8-ischemic and hemorrhagic insults, accompanying diseases were hypertonic disease in 7 patients (46,0%), prostate adenoma was registered in 5(33,3%) and diabetes in 3(21,0%). At the time of clinical admission condition was 16-25 points by "Appachi-2" scale. And dept of coma 8-12 points according to Glasgow scale. Treatment included correction of water electrolytic balance, acid-alkaline balance, pareteral and enteral nutritions, correction of blood circulation. Anti-congestion means and other standard actions(Z.kheladze,Zv.Kheladze,2015-2016). As a non-standard treatments patients had electric stimulation of bone marrow according to N **N4857** Patent. (Zv.Kheladze and others, 2005). After development of pneumonia in treatment process antibiotics were involved in the first week combination of Cephtryaxon and aminoglycosides intravenously and from second week mostly imipenem and drug groups of phtorchinolynes and vancomycin. They were chosen because of antibioticogram data. 8 patients who had a very severe condition were transferred into artificial lung ventilation from 4-5 days with average hyperventilation regimen by creation of positive pressure on exhalation periodically. In the clinic all patients were under cardio-monitoring. They had hematologic, biochemical, hemocoagulative, EEG, ECG, roentgen and sonographic tests everyday. Moreover in these patients CRP and procalcitonin concentrations were studied. The first was studied by HXema-medica (Russa) method and the second" Vector-best"(Russia) method. also in the blood of patients number of CD3,CD4,CD8,CD12,CD16,CD34 cells was studied by fluorescence immunoassay and cytokine spectrum of the same blood by the ways of IL2,IL4,IL6,Il8 and IL10. In first case there were used "Serion"(Russia) and in the second "Vector-best"(Russia) test systems. In addition to it, all patients had bacteriological analysis of phlegm and there was determined a sensitivity towards

antibiotics. Sowing of microbes and defining of resistance were carried out in aids of “oxsoid”(England) firm standard food land. Received data was elaborated by variation statistics.

Results and discussion: it must be mentioned that non of patients had acute respiratory failure and signs characteristic for pneumonia at the time of entering in clinic that was confirmed by airs in blood and roentgen analyses and also studying of acid-alkaline balance which was mandatory for all patients during first hour from clinical admission. Signs of pneumonia occurred in one patients (7%) after 48 hours, 3- after 72hours (20%) and after 96 hours-in 11 patients (73%). From them pneumonia of right lung middle part was prescribed to 3 patients, lower part’s pneumonia 4 and both lower parts of lungs-8 patients. It must be taken into consideration that localization of pneumonia centers in right lung may indicate to a micro-aspirational role of gastric fluid in bronchial tree; moreover, majority of patients suffered from acute pathology of brain with blurred consciousness. it must be mentioned, that the image of micro-aspiration was not evident in none of patients and it could have a hidden character. After discovery of first signs of pneumonia in blood of patients there were statistically reliable leukocytosis and left deviation of leukocytic formula, also in comparison with initial datum number of lymphocytes and positive cells was decreased that indicated to development of immune deficiency picture in contingent of these patients. On this background IL6 (18,0+-0.7pg/ml),CRP (20.0+-0,85 ng/ml) and procalcitonine (1,5+-=0,01 ng/ml)concentrations were elevated. These three showings were progressively decreased after improvement of patients’ conditions and remained the same of elevated when malignant ongoing occurred which was expressed as prolonged pathological process or lethal outcome. Also increase in IL-10( ) concentration had a prognostic meaning and discover of CD34 positive cells in blood. But increase in these data was considered as non-malignant ongoing of the disease and improved condition of a patient. From bacteriological tests during first week 5 patients had staphylococcus, 4-steptococcus, and 3-clebsiella and the same number of bacillus. These microbes were especially sensitive towards cephalosporins, aminoglycosides and fluoroquinolones. In next week 4 patients had klebsiella according to cytological examination, 4- gut bacillus, 3-aeroginasa, 2-streptococcus, and 2 staphylococcus. In 4 cases in phlegm bacterial flora was not increased. These bacteria were sensitive towards medicinal drugs of imipenem,

meropenem and 4th group cephalosporins. In none of cases an absolute resistant stamp was discovered, neither towards imipenem. These data indicate to the fact, that at the beginning the process is controlled by gram-positive microbial flora and then in it changed by gram-negative or anaerobic one. It must be noted, that empirical prescribtion of antibiotics gave positive and desirable results and antibiotics were selected according to results of bacteriological analysis. In this case it seems that bacteriological response needs some time and it has some influence. In that period, microbial flora acting in pathological process may change and sensitivity towards antibiotics as well. The pathological process in an organism can be leaded by other microbe or group of microbes. Sensitivity of these microbes towards antibiotics may be different in various organisms. Treating process of critical Conditions is limited and there is no time to conduct clinical experiments so treatment and suppress of pathological process is recommended in aids of antibiotic groups which can recover pathological process more or less and to save more intense antibiotics or combination of them for following stages of treatment.

All patients were 229,0 bed-days in clinics, each patients spent about 16,3 bed days in clinic. Total cost of treatment was 60672,0 USD $ that is about 225,0USD $ per each bed day. 3 patients did not survived condition of which was caused because of hemorrhagic insults and ischemic one. Three of them were old patients and aged over 70.

Conclusion: treatment process of some critical patients becomes complicated because of nosocomial infection. This infection worsens a clinical image, make treatment more expensive and results in bad outcome. In the development of nosocomial pneumonia hidden micro aspirations of bronchial tree’s gastric content may participate that must be caused by disorganization of sphincter of cardial parts of stomach and work of epiglottis.

Aiding factor of nosocomial pneumonia development can be the image of secondary immune deficiency that occurs because of old age, general and accompanying diseases and also because of critical conditions.

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Refertences:

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“Pnevmonia inspair”მულტიცენტრული კვლევის შედეგები საქართველოს კრიტიკული მედიცინის კლინიკაში
კრიტიკული მედიცინის ინსტიტუტი,თბილისი,საქართველო

შესწავლილია ნოზოკომიალური ინფექციის 15 შემთხვევა კრიტიკული მედიცინის კლინიკაში.ეს ავადმყოფები პნევმონიის განვითარებამდე არ იყვნენ ინტუბირებულნი და არ უტარდებოდათ ფილტვების ხელოვნური ვენტილაცია,მათ შორის არაინვაზიური მეთოდითაც. ნოზოკომიალური ინფექციით რთულდება კრიტიკულ მდგომარეობაში მყოფ 5%-მდე ავადმყოფთა მკურნალობის პროცესი. ეს ინფექცია ამძიმებს კლინიკური სურათის მიმდინარეობას, აძვირებს მკურნალობის ღირებულენას და აუარესებს კრიტიკულ ავადმყოფთა მკურნალობის გამოსავალს.ნოზოკომიალური პნევმონიის ჩამოყალიბებას ხელს უნდა უწყობდეს კრიტიკულ ავადმყოფთა ბრონქულ ხეში კუჭის შიგთავსის ფარული მიკროასპირაციები,რაც გამოწვეული უნდა იტოს ამ ავადმყოფთა კუჭის კარდიული ნაწილის სფინქტერისა და ხორხსარქველის მუშაობის დეზორგანიზაციით.ნოზოკომიალური პნევმონიის ჩამოყალიბებას ხელშემწყო ფაქტორად უნდა მიჩნეული იქნეს მეორადი

იმუნოდეფიციტის სურათი,რომელიც ამ ავადმყოფებს უყალიბდებათ მოხუცთა ასაკის, ძირითადი და თანმხლები დაავადებების, აგრეთვე კრიტიკული მდგომარეობების გამო.კრიტიკულ ავადმყოფებში ნოზოკომიალური ინფექციის მიმდინარეობისას ანტიბაქტერიული თერაპიის ფონზე იცვლება როგორც ნახველის მიკრობული ფლორა,ისე ამ მიკრობული ფლორის მგრძნობელობა ამ ანტიბიოტიკთა მიმართ.კრიტიკულ ავადმყოფებში ნოზოკომიალური ინფექციის "ავთვისებიანად" მიმდინარეობის პროგნოზულ მაჩვენებლად მიჩნეული უნდა იქნას ჩღ ,პროკალციტონინის და I - 6 კონცენტრაციის შემცირება. ხოლო დაავადების "კეთილთვისებიანად მიმდინარეობის მაჩვენებელია Iლ-2 და I 10 კონცენტრაციების მატება.კრიტიკულ ავადმყოფებში ძვლის ტვინის ელექტროსტიმულაცია ხელს უწყობს პერიფერიულ სისხლში ღეროვანი უკრედების გამოჩენას და აჩქარებს რეგენერაციულ-რეპარაციული პროცესების მიმდინარეობას.