AJPMHS GLOBAL RESEARCH NETWORK

AMERICAN Journal of Pediatric Medicine and Health Sciences
Volume 02, Issue 02, 2024 ISSN (E): 2993-2149

Study of Changes in the Blood Coagulation System in Patients With Bilateral Interstitial Pneumonia Out of the Hospital

Rakhimberganov Sanjarbek
Student of Treatment faculty, Urgench branch of Toshkent medical academy. e-mail:sanjarbekraximberganov@gmail.com; tel:+998(94)-369-27-04
Ulliyeva Nargiza
scientific supervisor, assistant Urgench branch of Toshkent medical academy

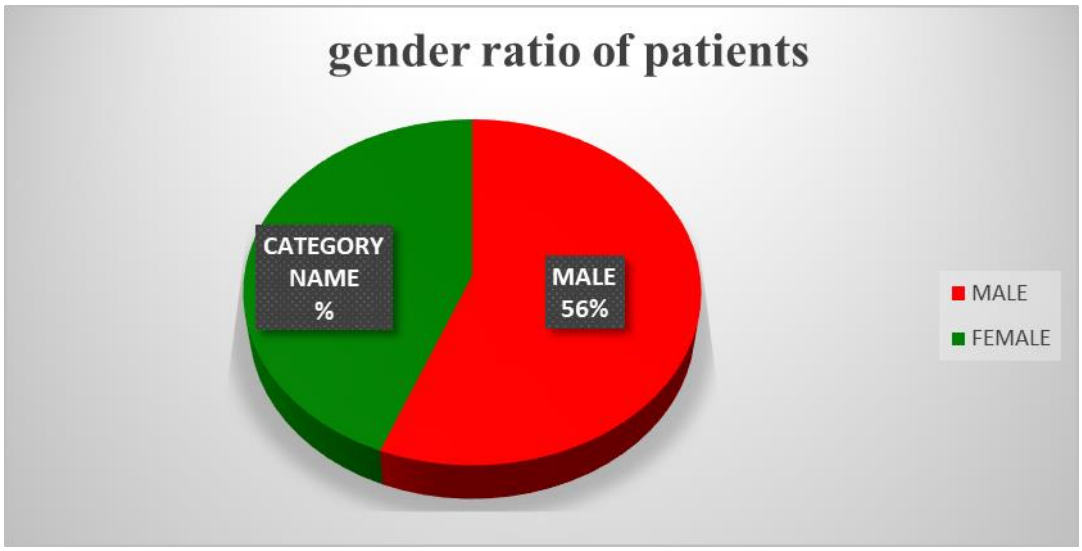
Abstract: This article provides information about the frequency of out-of-hospital bilateral interstitial pneumonia in terms of age and sex, and its serious harm to human health. Also, the hypercoagulability state, which plays an important role in the pathogenesis of the disease, its essence, and the changes in the blood coagulation system during the formation of the hypercoagulability state were analyzed in the youth section. The role of parameters of the coagulation system in diagnosis and evaluation of the effectiveness of treatment is given.
Key words: interstitial pneumonia, hypercoagulation, thrombosis, D-dimer, fibrinogen, coagulogram, thrombocyte, thrombocytopenia.

Relevance of the topic. The current global problem is the disease caused by the coronavirus infection. The clinical form of this disease, which gives negative results in special tests for coronavirus, is rapidly spreading among the population, and complications include respiratory failure or polyorgan pathologies. The term interstitial pneumonia describes an idiopathic pathological condition clinically characterized by interstitial lung disease leading to rapid onset of respiratory failure, distinct from other chronic forms of pneumonia. Histopathological findings show diffuse alveolar damage. Often, rapidly progressive interstitial pneumonia, especially secondary acute interstitial pneumonia, is confused with other clinical diseases characterized by accelerated forms of acute cryptogenic fibrous alveolitis. In addition, many authors use the above terms incorrectly and interchangeably.

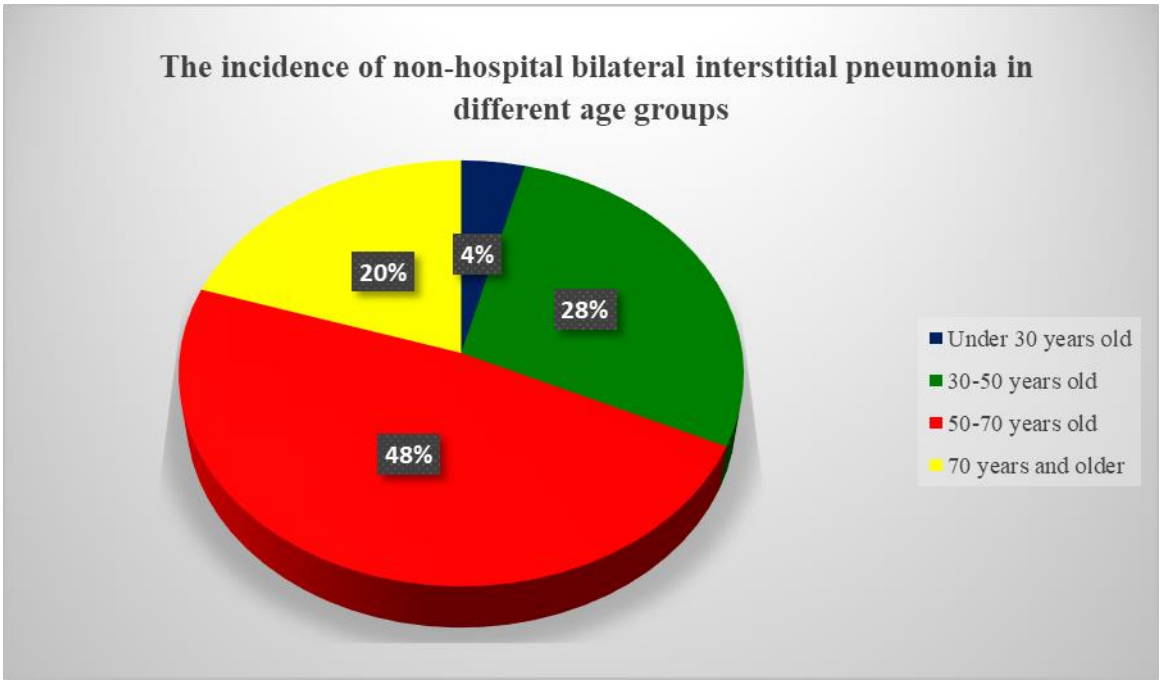
This review aims to clarify relative clinical and pathologic issues and terminology [1.1B]. Severe acute respiratory syndrome is relevant to coronavirus. Coagulopathies associated with DVS syndrome and other interstitial pneumonia appear in this disease. More than half of the patients admitted to the intensive care unit of Baylor St. Luke's Medical Center developed clinically significant thromboses associated with hypercoagulation. [2.1] Hypercoagulation syndrome is leading in the pathogenesis of the disease. Hypercoagulable syndromes are characterized by a high risk of thrombosis. Clinical manifestations may not be present at all, then coagulopathy is determined only by laboratory methods. In other cases, rapid clotting of blood with small injuries, thrombosis of venous catheters and needles during blood collection is observed.

The purpose of the study. To study the changes in the blood coagulation system in patients with bilateral interstitial pneumonia outside the hospital, to determine in which part of the blood coagulation system a strong change is formed.

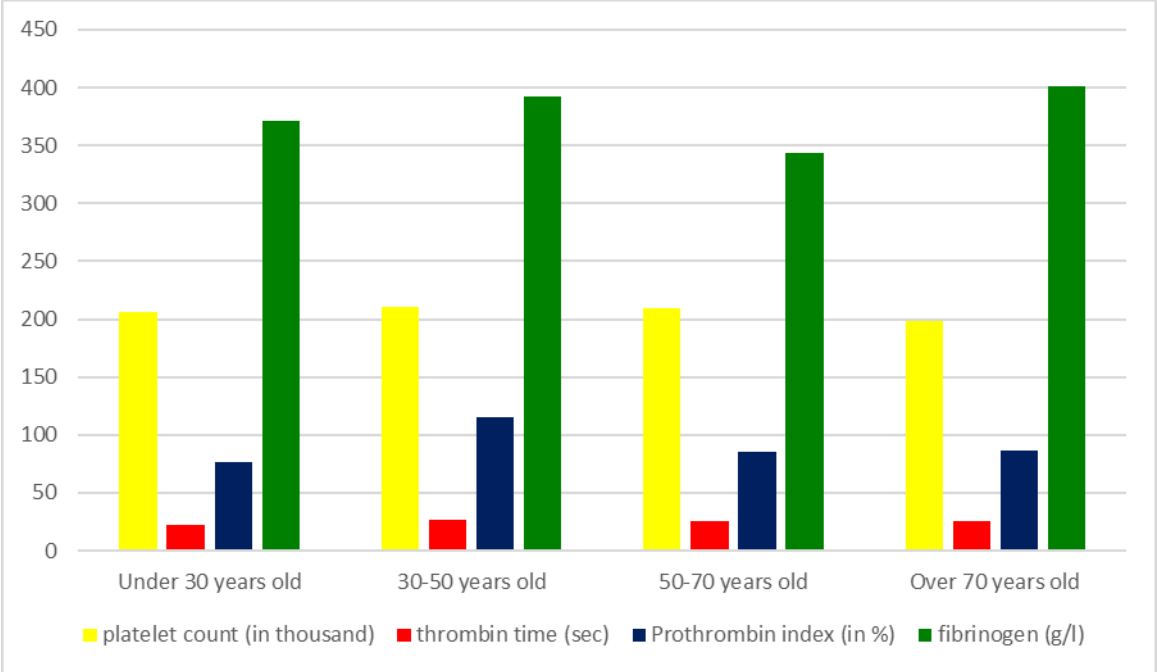
Materials and methods: 50 out-of-hospital patients with a diagnosis of bilateral interstitial pneumonia treated in the Therapy Department of Urgench city hospital were included in the study. Anamnesis was collected from them, laboratory-instrumental examinations were conducted. The number of thrombocytes was studied in the blood smear analysis. Biochemical analyzes of blood were carried out. Coagulograms were analyzed in the youth section.changeably. It has a poor prognosis with >70% mortality within 3 months despite mechanical ventilation. **Results.** A total of 50 patients participated in the study, 44% (22) of them were men and 56% (28) were women. In terms of age, 4% (2 people) are younger than 30 years old, 28% (14 people) in the 30-50-year-old interval, 48% (24 people) in the 50-70-year-old interval, and 20% (10 people) are 70 years old and older.) established. Patients were divided into 4 groups according to their age: 1) patients under 30 years old: the average number of platelets was 206,000; average prothrombin time 13.9 sec, PTI 76%, International Normalized Ratio (INR) 1.11, fibrinogen 371 g/l, thrombin time 22.5 sec, partially activated thromboplastin time 30.65 minutes; 2) patients aged 30-50 years: the average number of platelets is 210,500; average prothrombin time 11.6 sec, PTI 115.32%, international normalized ratio (INR) 0.984, fibrinogen 392g/l, thrombin time 27.16 sec, partially activated thromboplastin time 26.93 minutes; 3) patients aged 50-70 years: the average number of platelets is 210,000; average prothrombin time 13.31 sec, PTI 85.61%, International Normalized Ratio (INR) 1.14, fibrinogen 343g/l, thrombin time 25.74 sec, partially activated thromboplastin time 27.97 minutes; 4) patients older than 70 years: the average number of platelets is 198,800; average prothrombin time was 12.5 seconds, PTI was 86.01%, international normalized ratio (INR) was 1.076, fibrinogen was 401.6g/l, thrombin time was 25.7 seconds, partially activated thromboplastin time was 32.75 minutes.



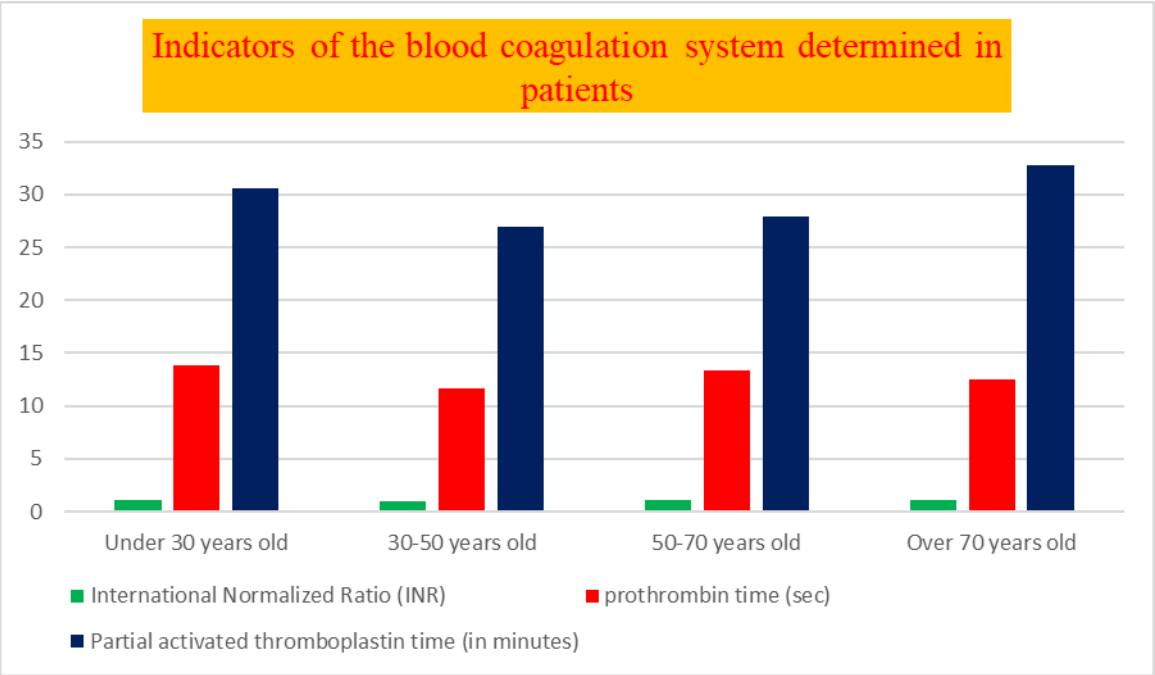
Graph 1. **Gender ratio of patients**



Graph 2. Gender ratio of patients



Graph 3. Indicators of the blood coagulation system determined in patients.



Graph 4. Indicators of blood coagulation system determined in patients.

Discussion of results. Patients with interstitial pneumonia have a complex coagulopathy characterized by elevated levels of D-dimer, a major breakdown product of fibrin degradation, and a particularly significant increase (ie, 3 to 4) is a sign of hypercoagulability. Less common features of coagulopathy associated with SARS-CoV-2 include prolonged prothrombin time and activated partial thromboplastin time and thrombocytopenia. The presence of hypercoagulability is the main element for the increased thrombotic risk that occurs in patients infected with SARS-CoV-2, which is indeed detected in approximately 20% of hospitalized patients with almost equivalent clinical manifestations in venous and arterial circulation. Thrombosis is a warning sign of poor outcome, highlighted by the significant association between thrombotic events and poor recovery. [3.1] Ischemic conditions, which are important in the pathogenesis of this disease, are also directly related to hypercoagulation. Acute limb ischemia is a life-threatening condition that develops in the general population due to multiple predisposing factors and hypercoagulable mechanisms by group 2 coronaviruses. [4.1] Although the level of blood coagulation parameters does not always depend on the severity of the disease, the coagulogram indicators of these changes are of diagnostic value. [5.2]D-dimer levels are one of the measures used in patients to detect thrombosis. A 3-4-fold increase in the concentration of D-dimer and fibrinogen in the early stages of interstitial pneumonia caused by a coronavirus infection is associated with a poor prognosis. In addition, underlying diseases such as diabetes, cancer, stroke, and pregnancy can also cause an increase in D-dimer levels in patients with interstitial pneumonia.

Summary. Pathology in the blood coagulation system is observed in patients with bilateral interstitial pneumonia outside the hospital. The number of thrombocytes is normal in all age groups and does not change. Changes in the coagulogram are the basis of the blood hypercoagulation process. The coagulogram is formed mainly due to changes in prothrombin index, fibrinogen and partially activated thromboplastin time. The prothrombin index typically decreases below the norm at the age of 30, and increases at the age of 30-50. Fibrinogen increases in patients over 70 years old, and in other age groups it is normal. Partially activated thromboplastin time is shortened in all age groups and forms the basis of hypercoagulable

syndrome. Measurement of D-dimer levels and coagulation parameters early in the course of the disease may also be useful in monitoring and managing the disease.

List of used literature:

1. **Acute interstitial pneumonia European Respiratory Journal 15(2):412-8 DOI:10.1034/j.1399-3003.2000.15b31.x . D. Bouros. National and Kapodistrian University of Athens. Athens, Greece.**
2. Pulmonary hypertension in chronic interstitial lung diseasesAntonella Caminati, Roberto Cassandro, Sergio Harari .European Respiratory Review 2023 22: 292-301; DOI: 10.1183/09059180.0000271
3. Hypercoagulation and Antithrombotic Treatment in Coronavirus 2019: A New Challenge April 2020 Thrombosis and Haemostasis 120(6) DOI:10.1055/s-0040-1710317 Authors: Francesco Violi, Daniele Pastori ,Roberto Cangemi, Pasquale Pignatelli Sapienza University of Rome
4. Incidencce of Major Limb Arterial Thrombosis in Positive versus Negative COVID-19 Patients: A Cross-Sectional Retrospektive study. Alaa Eddin Nwilati, Masoud Shafiei, Rawda Mehanna, Diana Kokash, Juwairiya Syed Iqbaluddin, Fatima Hallak, Shamsa Farah Abdalla. Vascular Surgery Departament, Rashid Hospital, Dubai Health Authority, Dubai, UAE.
5. Hemostatic System (Fibrinogen Level, D-Dimer, and FDP) in Severe and Non-Severe Patients With COVID-19: A Systematic Review and Meta-Analysis. Clin Appl Thromb Hemost. 2021 Jan-Dec;27:10760296211010973. doi: 10.1177/10760296211010973
6. D-dimer level in COVID-19 infection: a systematic review Mehrdad Rostami , Hassan Mansouritorghabeh Expert Rev Hematol. 2020 Nov;13(11):1265-1275. doi: 10.1080/17474086.2020.1831383. Epub 2020 Oct 12