Keywords: Geographic distribution, hemorrhagic fever, differential diagnosis, Albania.

Introduction
Viruses associated with Viral Hemorrhagic Fevers are zoonotic. This means that these viruses naturally reside in an animal reservoir host or arthropod vector. The cotton rat, deer mouse, house mouse, and other field rodents are examples of reservoir hosts. Arthropod ticks and mosquitoes serve as vectors for some viruses associated with arthropod vectors are spread most often when the vector mosquito or tick bites a human, or when a human crushes a tick [4].

The aim of this study is to identify the virus of the cases suspected of hemorrhagic fever and to evaluate the geographic distribution of the virus in Albania.

Material and Methods
The 128 patients, presented from January 2013 to December 2015 at the Department of Infection disease in Tirana and suspected for hemorrhagic fever, were taken in this study. 128 blood serum samples were taken from the Institute of Public Health of Tirana to confirm the diagnosis. We performed immunoglobulin IgM and IgG enzyme-linked immunosorbent assay (ELISA).

All of the patients had similar clinical and laboratory findings, including fever, petechiae, headache, abdominal pain, nausea, vomiting and liver enzyme elevations.

Data as gender, age, occupation, settlement, time of symptoms and relation with vectors, hosts or humans who were sick was collected from the patients. The data was analyzed by SPSS program. The continued variables were presented as mean and standard deviation; categorized variables were presented as percentage.

Results. From 128 blood serum sample, only 34% (n = 43) were positive for IgG and IgM by Elisa methods for hemorrhagic fever. In 43 (34%) patients with hemorrhagic fever, 63% was positive for Crimea Congo Hemorrhagic Fever, 28% was positive for Hantan and 9% for Leptospirosis.
The mean age and standard deviation of the patient positive for hemorrhagic fever was 45.7 ± 22.9 years old. The mean age of the cases with Crimea Congo hemorrhagic fever was 44.8 ± 16.4, for Hantan was 41.8 ± 18.5 and for Leptospirosis was 50.5 ± 33.7. The frequency of patients with Crimea Congo hemorrhagic fever was higher than the patient with Hantan and Leptospirosis.

In cases the prevalence of male (63 %) was higher than female. Regarding the occupation of the cases, the majority 23 (54 %) were housewife, were 16 (59 %) were diagnosed with Crimea Congo Hemorrhagic Fever, 5 (42 %) with Hantan and 2 (50 %) with Leptospirosis.

The majority of cases was seen more in north Albania; 40 % (n = 17) in Has city, and all of this cases were with Crimea Congo Hemorrhagic Fever. The 12 % (n = 5) of cases was seen in Kukes and Tropoja cities, were in Kukes all the cases were with Crimea Congo Hemorrhagic Fever, and in Tropoja we had one case with Crimea Congo Hemorrhagic Fever and 4 cases with Hantan. Cases with Leptospirosis were seen more in the cities of Tirana (n = 2), Skrapar (n = 1) and Fier (n = 1).

### Discussion

Viral hemorrhagic fevers are caused by several families of enveloped RNA viruses: Arenaviridae (Lassa fever, Junin and Machupo), Bunyaviridae (Crimean-Congo hemorrhagic fever, Rift Valley Fever, Hantan hemorrhagic fevers), Filoviridae (Ebola and Marburg) and Flaviviridae (yellow fever, dengue, Omsk hemorrhagic fever, Kyasanur forest disease) [5].

Some Viral hemorrhagic fevers are spread person to person through direct contact with symptomatic patients, body fluids, or cadavers or through inadequate infection control in a hospital. Zoonotic spread may occur from contact with livestock, rodent, bats, mosquito and infected ticks [6].

In Europe, hemorrhagic fever is seen in different countries in the region such as: south-western regions of the Russian Federation [7]. During the last decade, CCHF outbreaks have also been noted in Albania in 2001 and 2003, and in Kosovo in 2001 [8]. Has and Kukes is situated in north part of Albania, which is close to Kosovo boarder, and has an environment for ticks spreading CCHF due to its geographic structure, climate and lifestyle of people living there. In our study is seen that north Albania has the higher frequency of cases with Crimea Congo Hemorrhagic Fever in Has and Kukes. The incidence of CCHF increased with increasing mean temperature in areas with CCHF cases [9]. In our study most cases were reported between April and September. Hantaviruses are enzootic viruses that maintain persistent infections in their rodent hosts without apparent disease symptoms. The ecology of Hantaviruses in their rodent reservoirs depends upon complex interactions among competing drivers, including climate and landscape/habitat [10]. In our study the economic condition and habitat had an important role in the distribution of the infection in different areas of Albania. Endemic areas have been re-infected. The distribution was in different part of Albania and it was correlated with the seasonality and profession of patients.

Leptospirosis is a direct zoonotic disease caused by spirochetes belonging to different pathogenic species of the genus Leptospira, Large number of animal’s acts as carriers or vectors. Human infection results from accidental contact with carrier animals or environment contaminated with leptospires. The primary source of leptospires is the excretory animal [11]. In our study the epidemiology of leptospires is seen in Tirana, Skrapar and Fier. The majority of cases occur among livestock farm workers and meat processing workers.

### Conclusion

The majority of cases with hemorrhagic fever in Albania in the period of time from January 2013 to December 2015 were represented with a higher prevalence of Crimea Congo Hemorrhagic Fever.

The distribution of hemorrhagic fever was in different part of Albania, Crimea Congo Hemorrhagic Fever was seen only...
in north Albania. The geographic distribution was correlated with the seasonality and profession of patients. The diseases caused by these viruses are seen in people living in or having visited these areas.

References:

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The influence of sulfaporine on indicators of nitric oxide system at experimental hypercholesterolemia

Abstract: At the heart of the development of endothelial dysfunction at HCS an important role plays decrease of the synthesis of endothelial nitric oxide and increase its active radicals, causing a modification of low density lipoproteins. Sulfated chitosan reduces high levels of peroxynitrite and endothelin-1, increase the activity of eNOS and nitric oxide.

Keywords: Nitric oxide system, sulfaporine, hypercholesterolemia.

So far, cardiovascular disease remains the leading cause of death in most developed countries in Europe, accounting for 40% of all deaths. To date, set a number of factors of different nature [1], contributing to the development and progression of coronary heart disease — dyslipidemia, hypertension, overweight tala, smoking, physical inactivity, diabetes. Much attention is paid to the cellular and molecular bases of endothelial dysfunction [4; 5]. An important role in endothelial dysfunction belongs nitrogen oxide [6; 7].

The pathogenesis of atherosclerosis is quite difficult, but important role in this belongs to, is dyslipidemia that defines initiation of inflammation cascade mechanism. Therefore, an important role in the development of therapeutic measures belongs to lower cholesterol and other saturated fats [2; 7]. Last years much attention is paid to a natural biodegradable compounds, in particular chitosan and its derivatives. The Institute of Polymer Chemistry and Physics, Academy of Sciences of Uzbekistan under the leadership of SS Rashidova developed various chitosan derivatives.

Research objective: to evaluate the impact of sulfaporina on the system nitric oxide at experimental hypercholesterolemia (HCS).

Materials and research methods. To solve the problems, experiments were performed on 46 rabbits Chinchilla average weight of 2.5–3.0 kg, contained in the standard power mode. Experimental Model HCS at experimental animals is reproduced by introduction by orally dissolved cholesterol (LDL) in sunflower oil in the ratio 0.2 g per 1 kg of body weight per day for 3 months. On the development of HCS was judged by the increase in total cholesterol and LDL (LDL) and high (HDL) density, which is determined on a biochemical analyzer.

After 2 months from the start of the experiment rabbits were divided into five groups:

- Group 1 — intact (rabbit 6), which through the mouth daily entered sunflower oil 1.0 ml/kg;
- Group 2 — HCS + H2O — control (8 rabbit);
- Group 3 — HCS + gemfibrazil on100 mg/kg (8 rabbits);
- Group 4 — GCN + chitosan sulfate 25 mg/kg (rabbit 8);
- Group 5 — HCS + chitosan sulfate 50 mg/kg (rabbit 8).

Action of preparations is investigated in dynamics: an initial 3-month's condition and after one month of introduction of preparations. On the state of NO-ergic system judged by the level of nitric oxide metabolites [9], the activity of nitric oxide synthase (eNOS), the activity of nitrate reductase (NR) [10] and the level of peroxynitrite (ONO0) [9].

Results of investigation and discussion

The most important role in the implementation of vascular endothelium function and dysfunction is plays a NO-ergic system.

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