Introduction:
Near-infrared Spectroscopy (NIRS) was proposed as a concept in the end of 20th century. This method offers noninvasive monitoring of oxy- and deoxyhemoglobin in tissues. NIRS could be measured on the thenar or forehead within few centimeters of the skin. It was first applied as a monitoring in cardiovascular surgery. Patients with sepsis have changes in the microcirculation which are important target for therapy. Invasive monitoring of oxygen delivery and consumption has been used in patients with sepsis but as every invasive technique such a monitoring hides risks. NIRS offers a noninvasive method for tissue oxygenation monitoring (StO2) and could be useful in patients with sepsis and septic shock.
The aim of the study is to compare noninvasive tissue oxygenation monitoring with hemodinamic monitoring and lactate values in patients with sepsis.

Methods:
The study includes 19 critically ill patients in ICU of UMHAT Alexandrovska, Sofia. 10 of the patients fullfil the criteria for septic state. The other 9 patients do not have sepsis. In both group of patients are measured tissue oxygenation with INVIOS monitor, mean arterial pressure, oxygen saturation in mixed venous blood and lactate values during 72 h after ICU admission.

Results:
Patients with sepsis are reported with significantly lower values of tissue oxygenation, compared to patients without sepsis. The values of tissue oxygenation correlate well with the mixed venous blood oxygenation, mean arterial pressure and lactate values but not significantly with APACHE scores.

Conclusion:
NIRS when used for tissue oxygenation monitoring correlates well with the hemodinamic monitoring and lacate values in patients with sepsis and could be used as an noninvasive monitoring for guiding therapeutical strategies.
Tissue oxygenation monitoring has no linear correlation with the severity of illness in patients with sepsis and could not be recommended as a guidance in the early ressuscitating stage of sepsis. Further investigations in these field are needed.