Introduction:
Recent literature data clearly indicated that in patients with shock the resuscitation of macro-circulation often does not match with microcirculation and tissue perfusion improvement. Unfortunately, the bedside assessment of regional perfusion remains difficult, particularly in critically ill patients. In the last years thermography has been used in different medical fields but no studies have been performed on the use of this technique in critically ill patients. The aim of this study was to evaluate whether thermography is feasible and may provide useful data during resuscitation of patients with septic shock.

Methods:
In 4 patients with septic shock we collected central systemic temperature and infrared images (FLIR-T640 digital camera) of limbs at 0, 3, 6 and 24 hours after shock occurrence. Thermal pattern distribution of the limbs was obtained by a specific analysis of the images (ThermaCAM™Researcher P). A systemic to peripheral temperature gradient called “Δ systemic-limb temperature” was calculated for each single temperature data collected.

Results:
Macrocirculatory and perfusion parameters improved in all the patients throughout the study period: mean values of noradrenaline dose decreased from 0.21 to 0.13 μg/kg/min, mean MAP increased from 65 to 81 mmHg and mean blood lactate decreased from 6.6 to 4.2 mMol/L. The “Δ systemic-limb temperature” pattern showed an heterogenous time course in the 4 patients with a mean overall increase at 6 and 24 hours (Figure 1).

Conclusion:
As expected, the regional data obtained by thermography did not match with macrocirculatory and systemic perfusion parameters. The significance and the relationship between treatments and data observed will be investigated by appropriate studies.