The strategy of infusion therapy during MOF in multiply-injured patients

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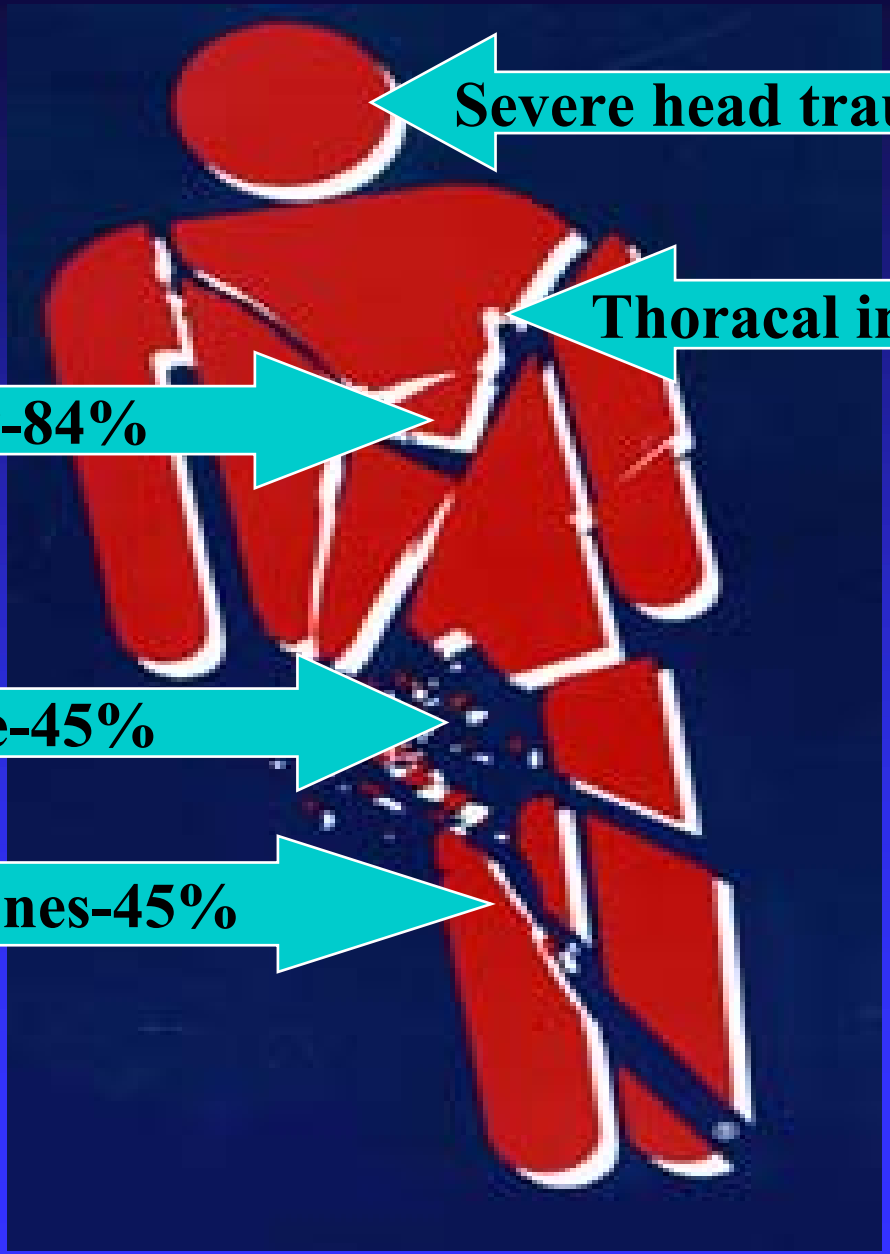
MOF

How does the course of MOF in multiply-injured patients look like, if we shall investigate the parameters of central and peripheral hemodynamyc, parameters of ventilation and gas exchange ?

Is there a difference among lethal and non lethal MOF?

What strategies of infusion therapy during MOF can we propose?

Severe injured patients



Severe head trauma-86%

Thoracal injury-88%

Abdominal injury-84%

Pelvic ring fracture-45%

Fracture of large bones-45%

Severe injured patients

APACHE II score - 32,8±3,9

ISS score – 35,8±5,4

MOF Denever Score- 7,5±2,4

Methods of investigation:

Scales:

ISS, APACHE-2, GCS, LIS, MOF Denever Score,

Ventilation and gas exchange:

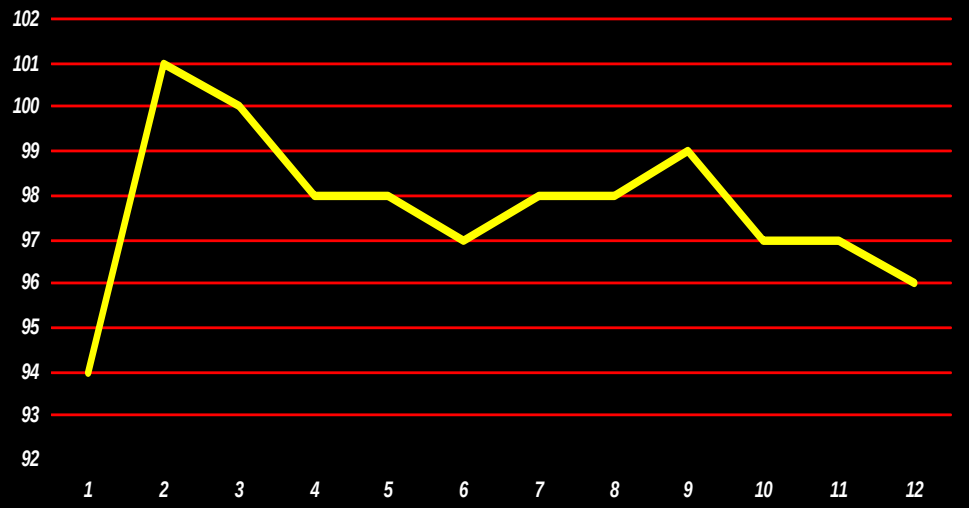
PaO2, paCO2, FiO2, PaO2/FiO2, C dyn, Cstat, D(A-a)

Central and peripheral hemodynamyc:

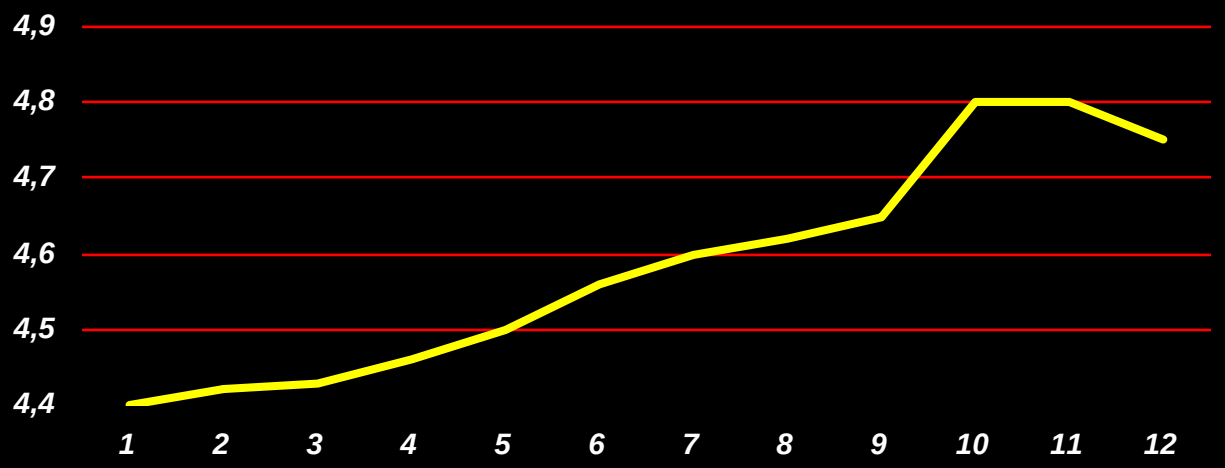
Mean arterial pressure, heart rate, stroke volume, cardiac output, system vascular resistance, blood volume, volume of extracellular fluid, balance of extracellular fluid

heart rate

mean arterial pressure

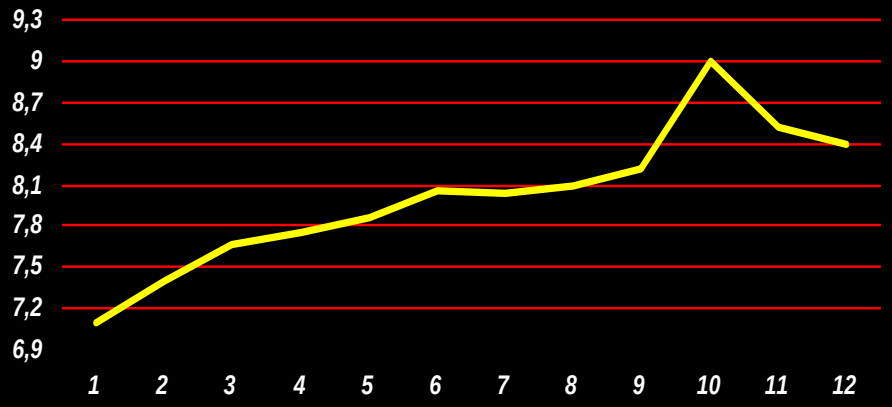


cardiac index

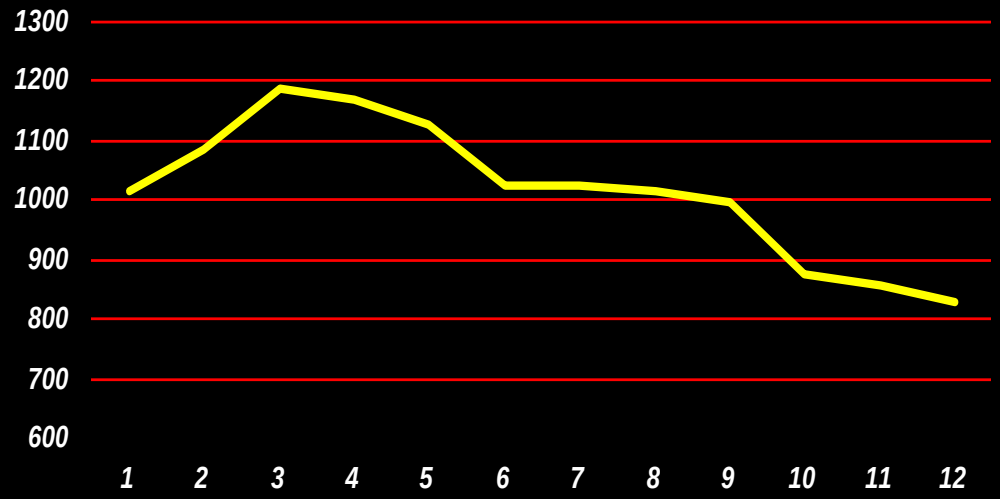


left ventricular contraction capacity

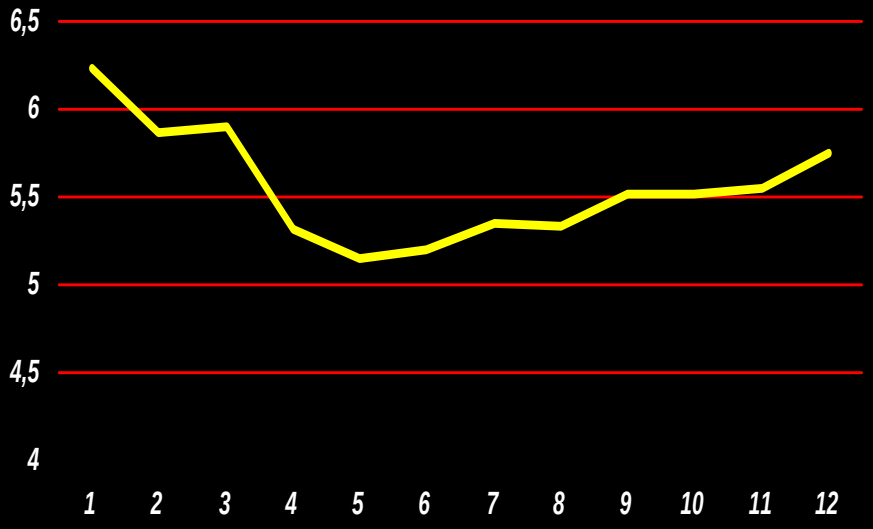
cardiac output



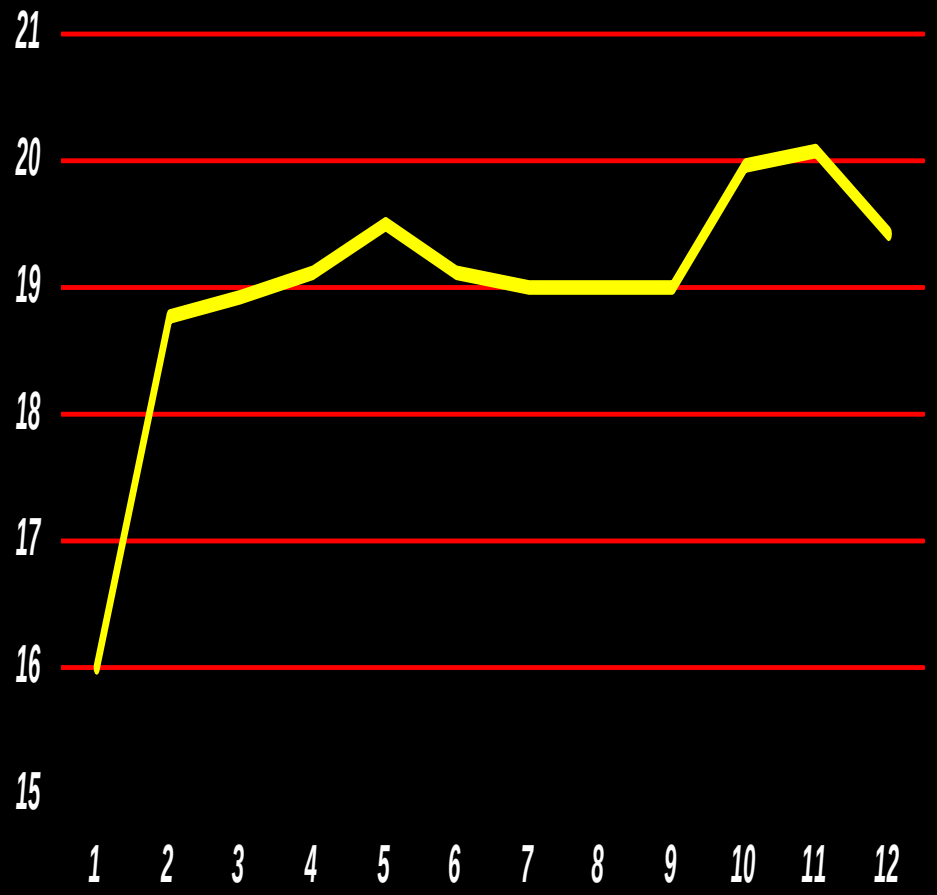
system vascular resistance



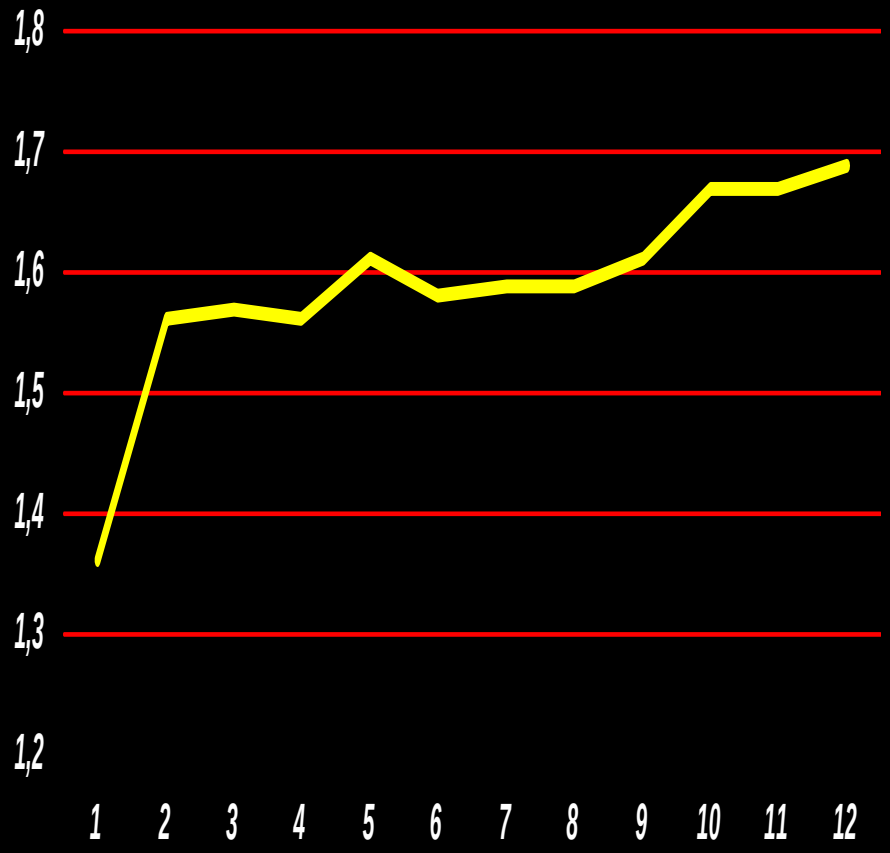
Blood volume



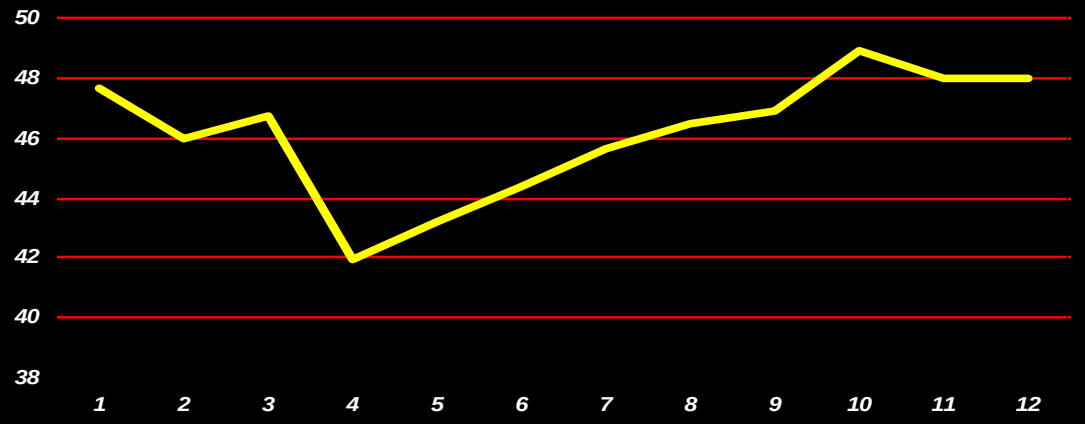
volume of extracellular fluid



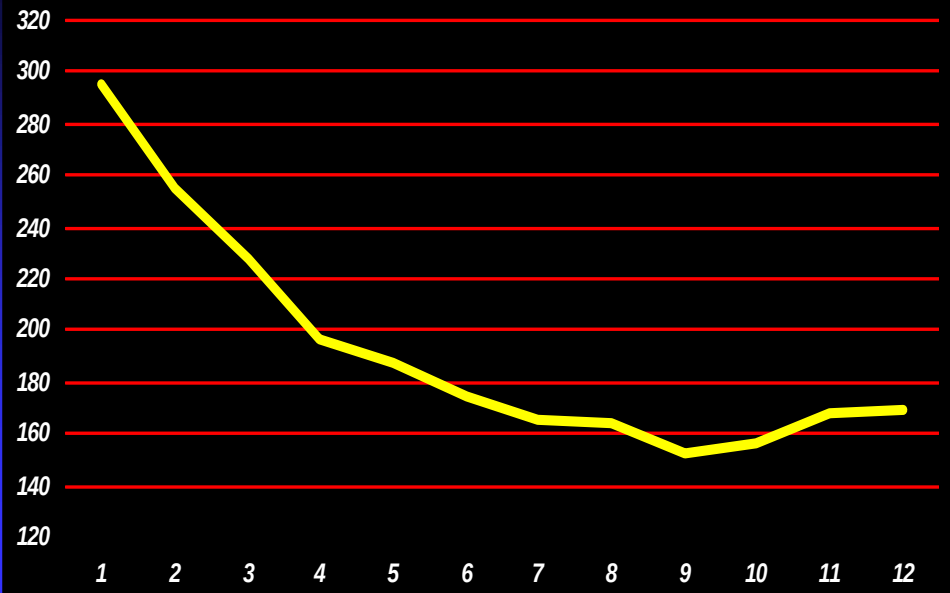
balance of extracellular fluid



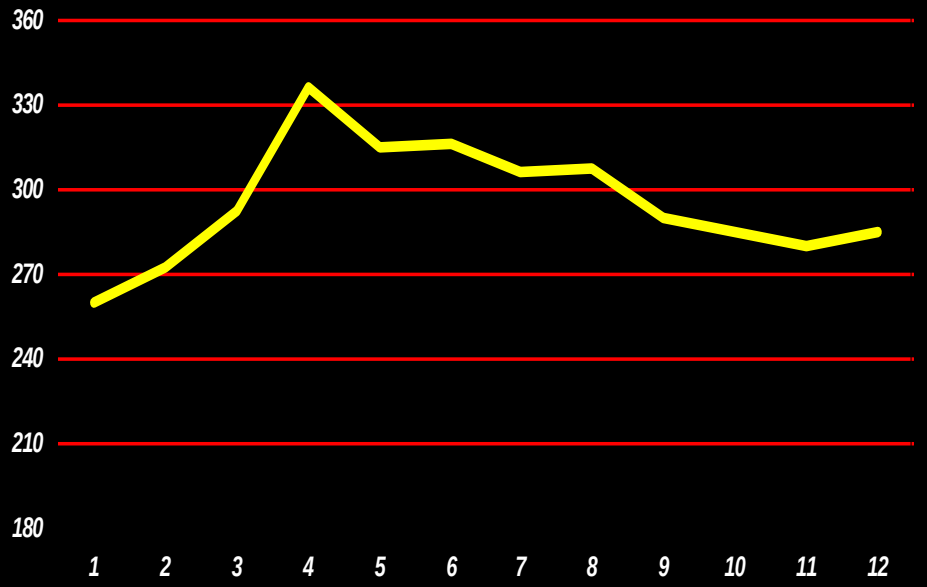
static compliance



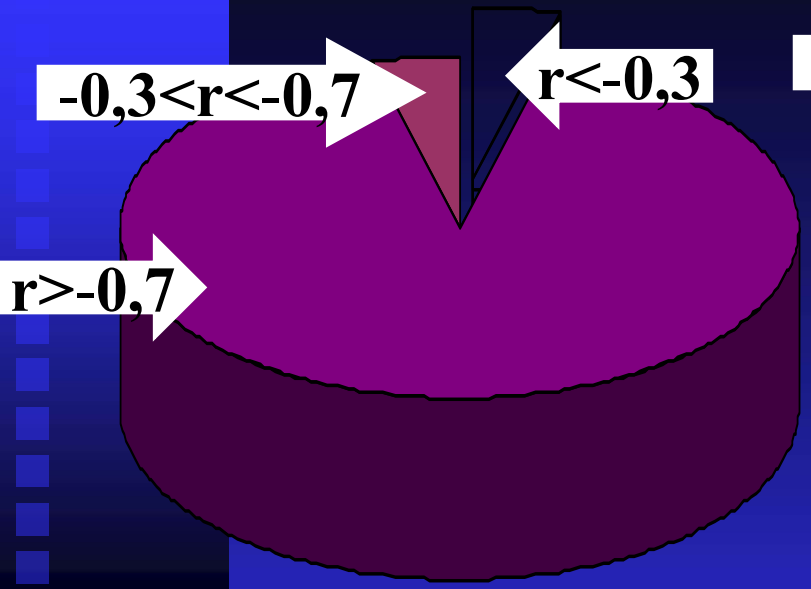
PaO2/FiO2



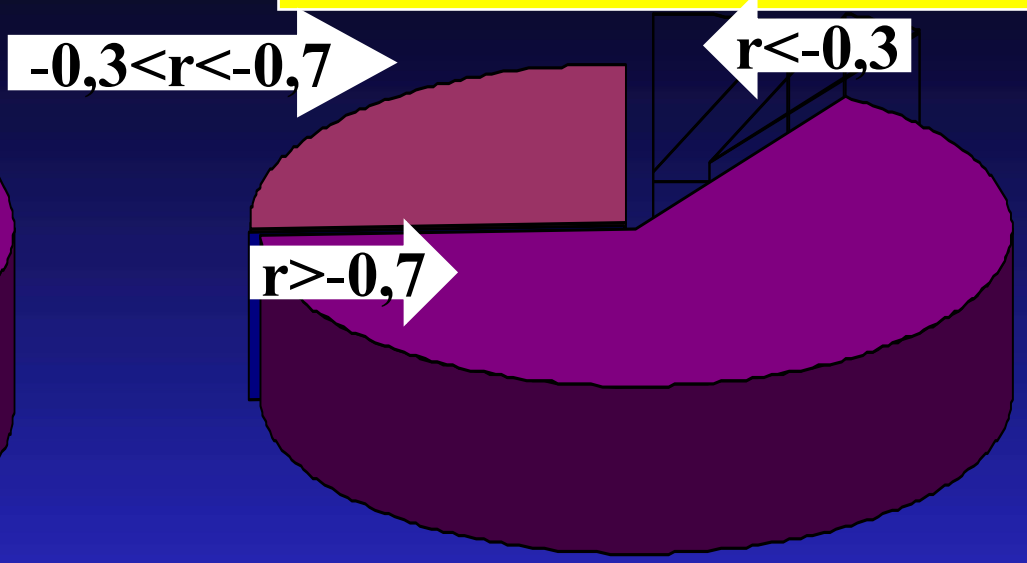
D(A-a)



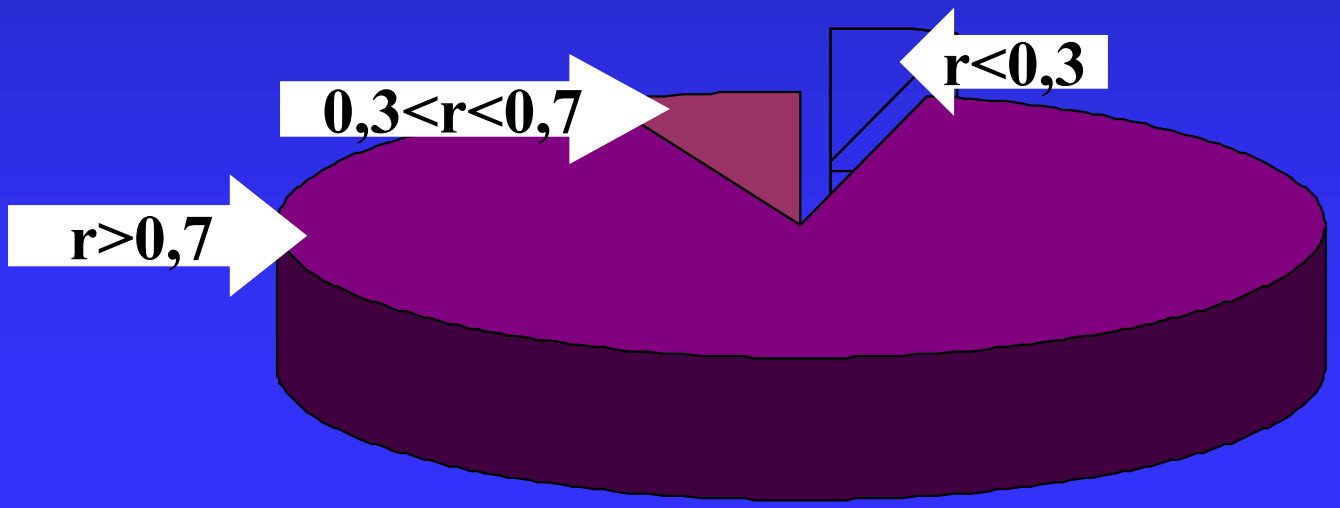
Volume of extracellular fluid-PaO2/FiO2



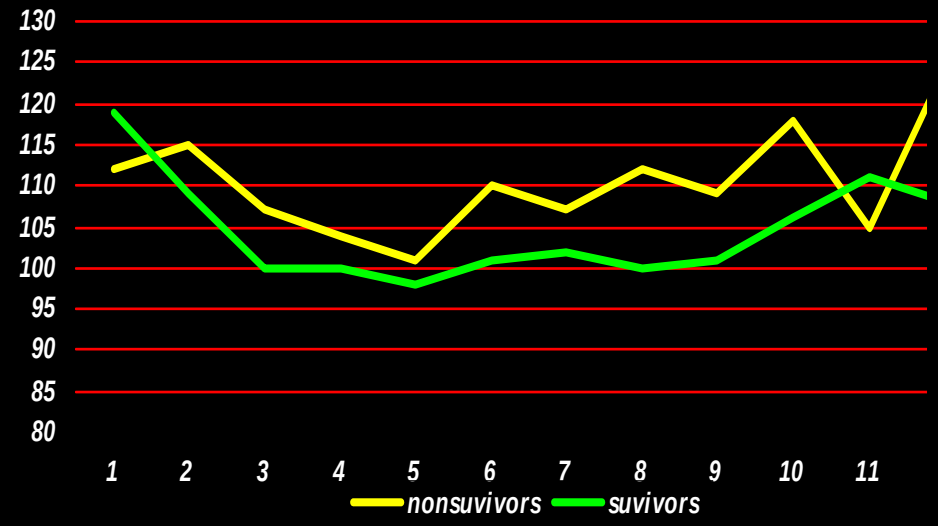
Volume of extracellular fluid -Cstat



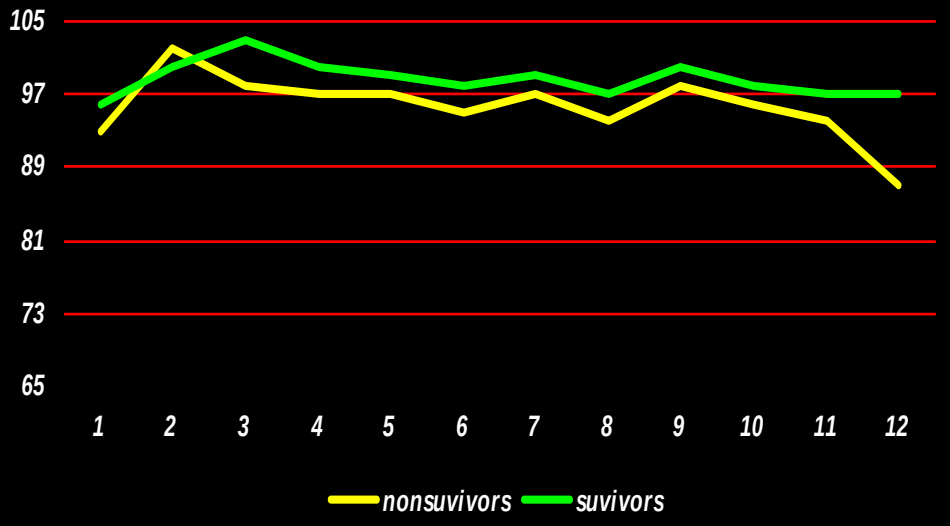
Volume of extracellular fluid -D(A-a)



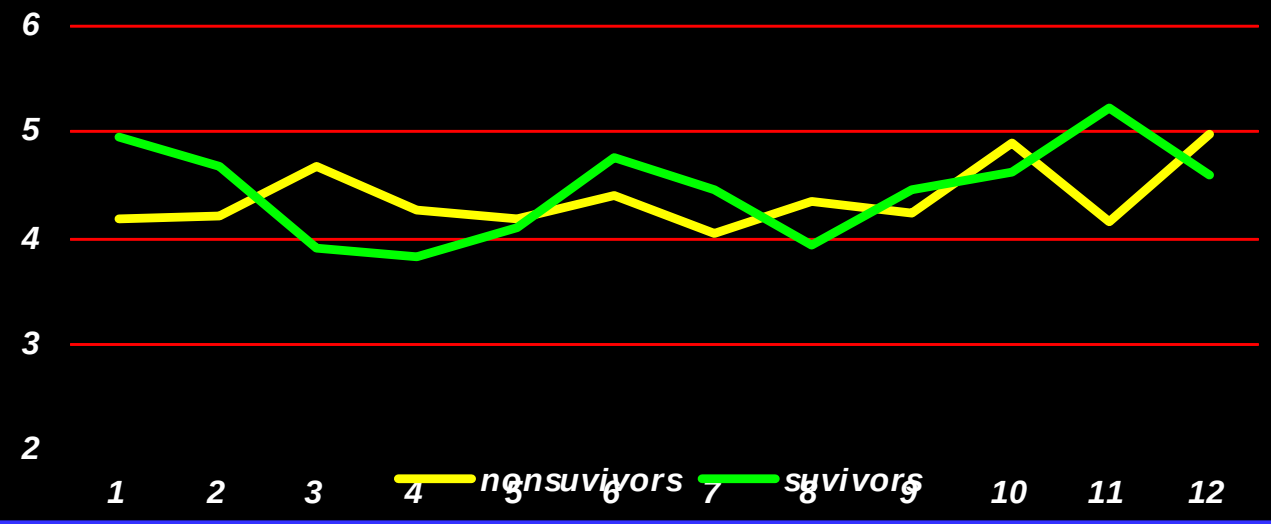
heart rate



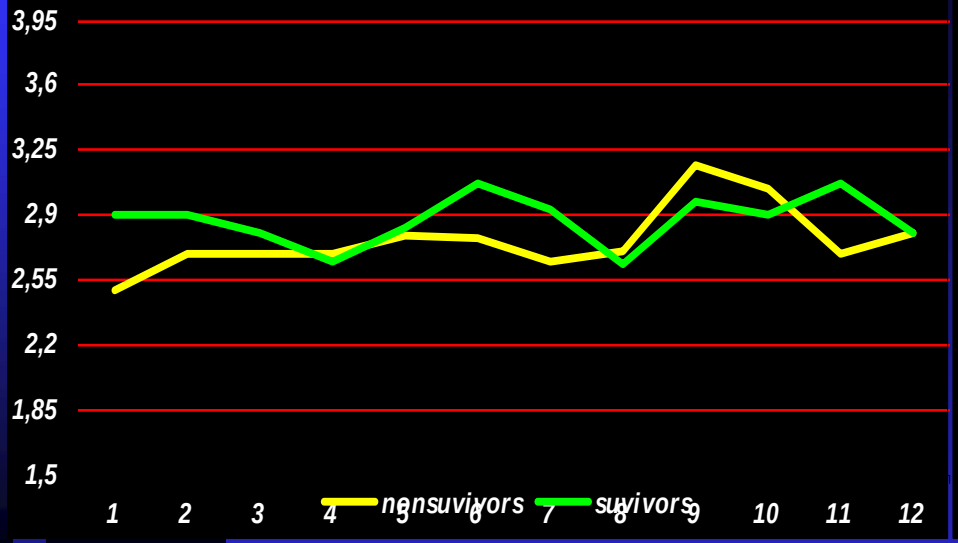
MAP



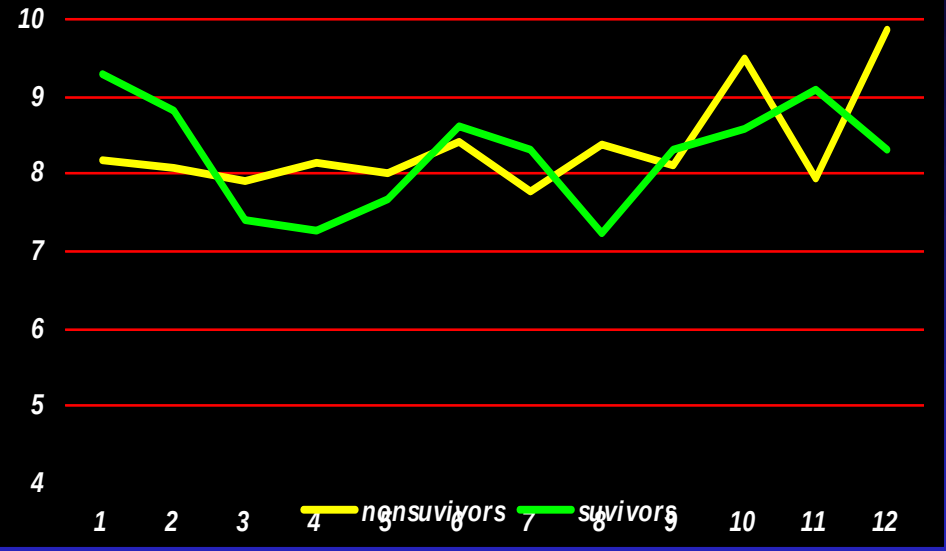
cardiac index



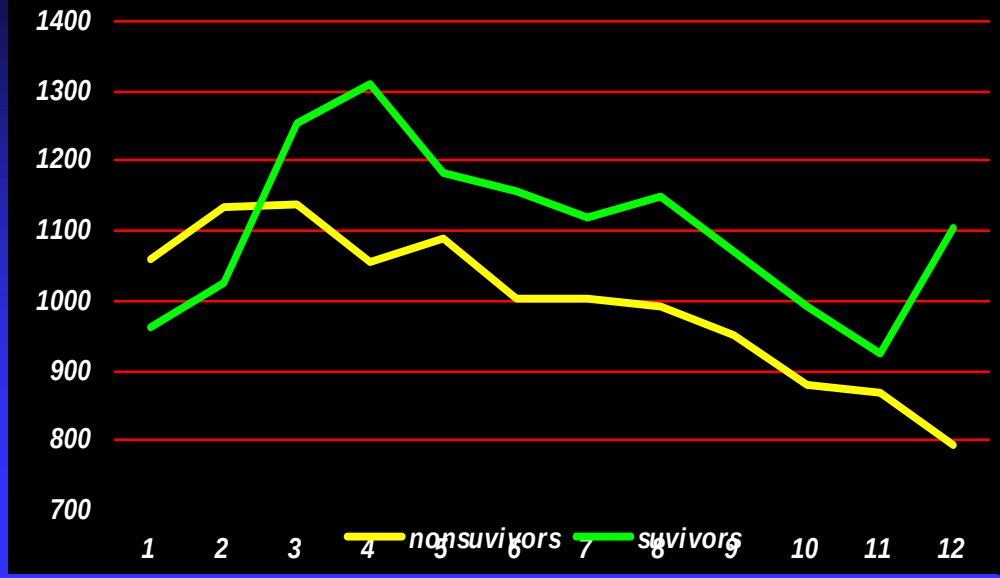
left ventricular contraction capacity



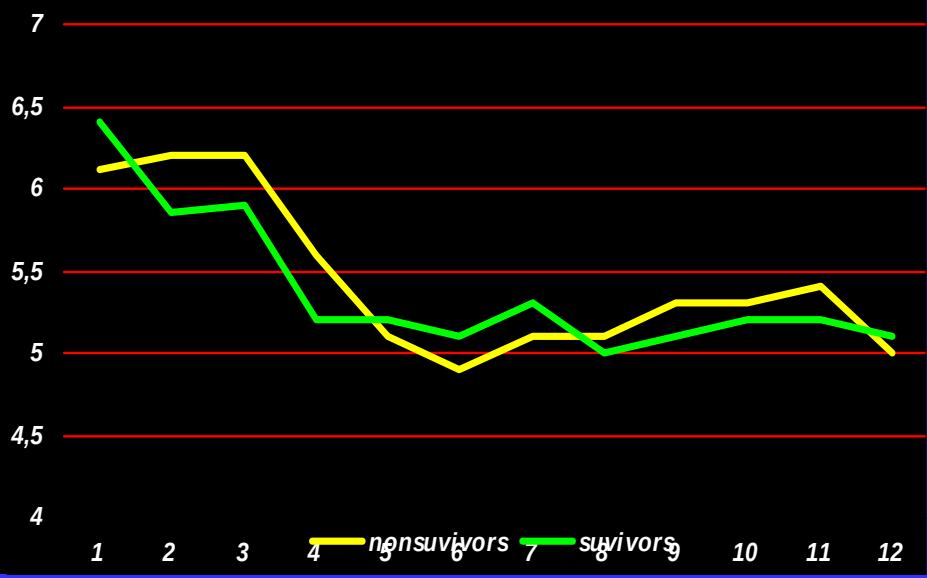
cardiac output



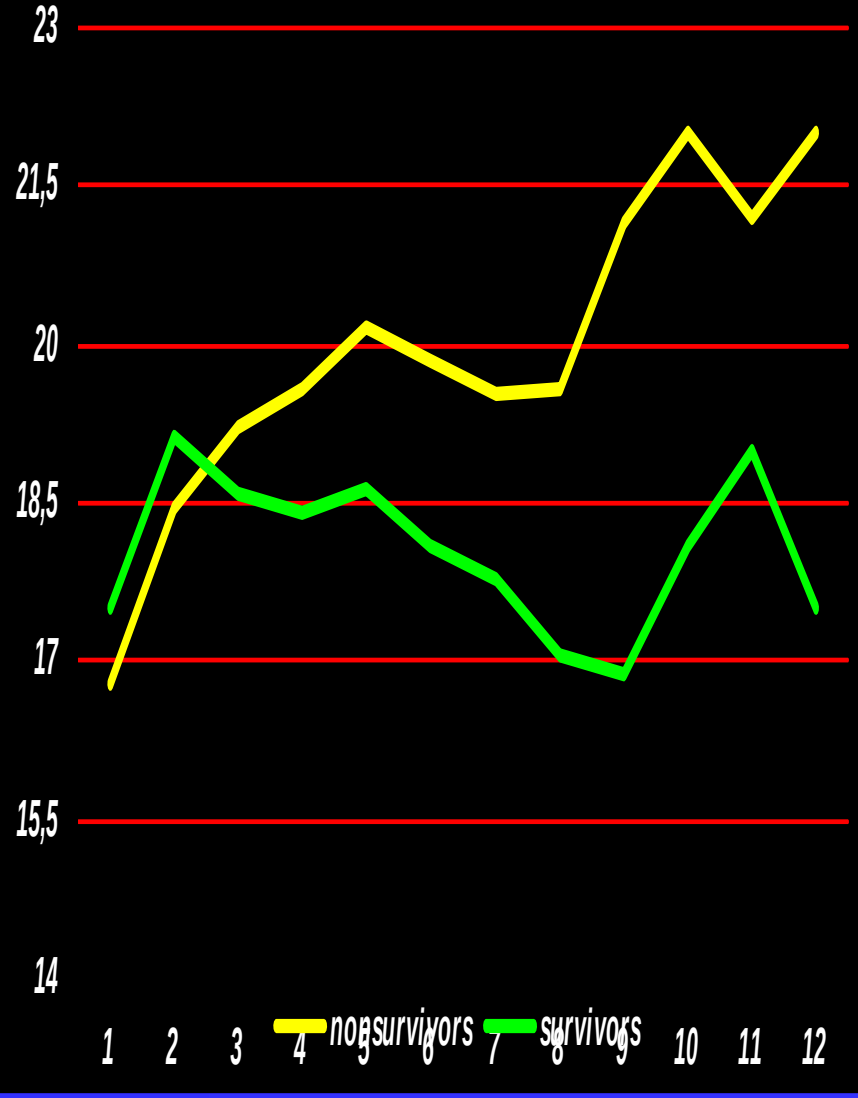
system vascular resistance



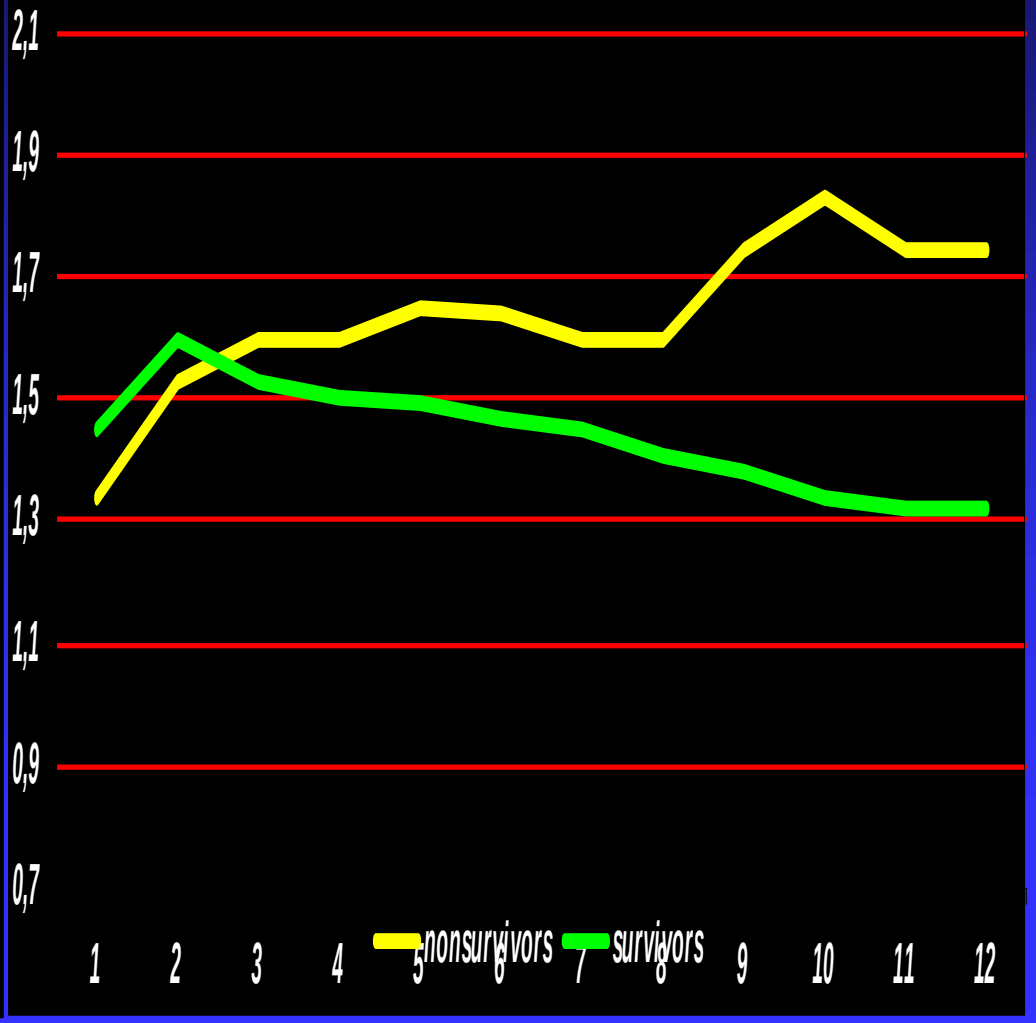
blood volume



volume of extracellular fluid



balance of extracellular fluid



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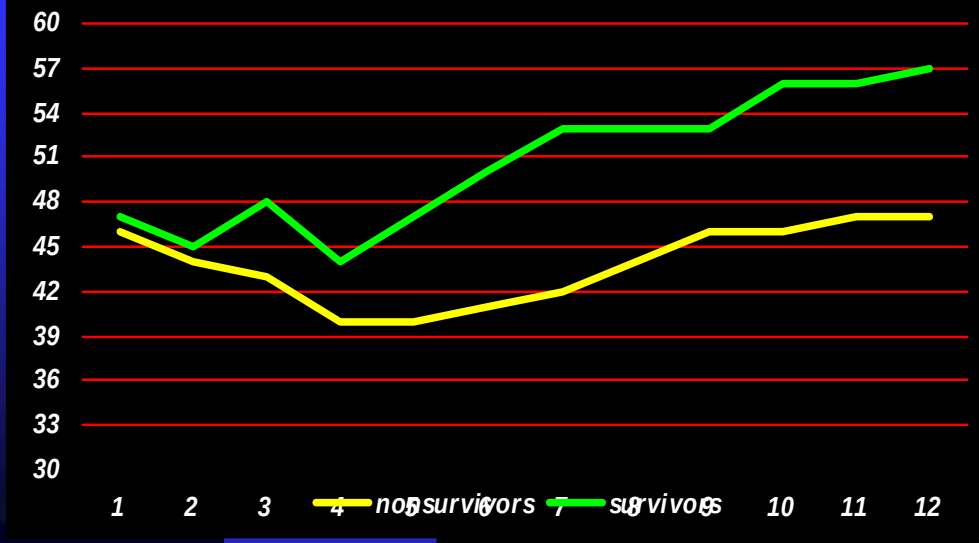
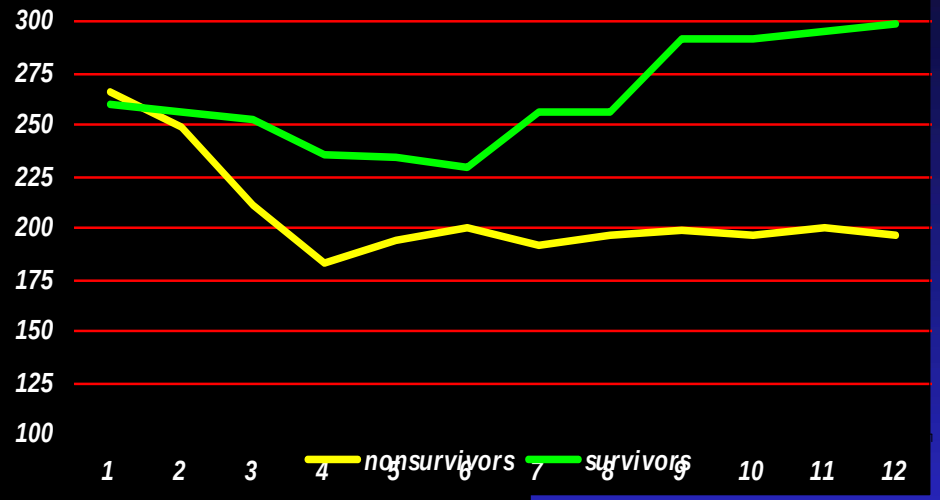
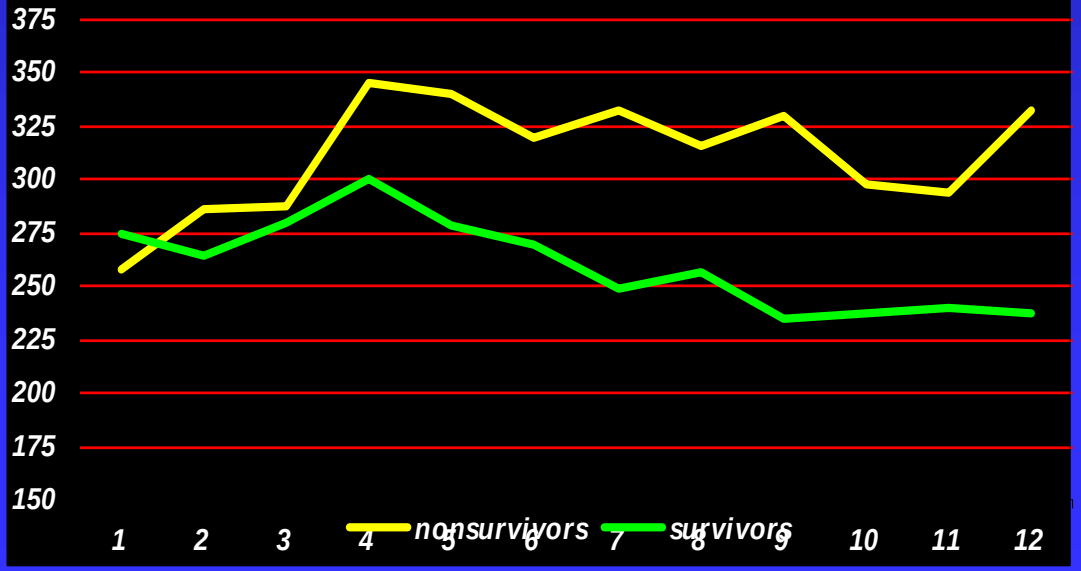


PaO2/FiO2



D(A-a)



Problems of infusion therapy of MOF

1. Velanovich V. Colloids versus crystalloids fluid resuscitation: a metaanalys of mortality; 1989.
2. SAFE: a comparison of albumine and saline for fluid resuscitation in ICU; 2004.
3. VISEP: HES and Ringers lactate for fluid resuscitation in patients with severe sepsis; 2006.
4. Sirtl C, Labenthal H, Zumtobel V, Kraft D, Jurecka W. Tissue deposits of hydroxyethyl starch : dose-dependent and time-related// Br. J. Anaesth.-1999.-Vol. 82.-P. 510-515.
5. Auwerda JJ, Leebeek FW, Wilson JH. Acquired lysosomal storage caused by frequent plasmapheresis procedures with hydroxyethyl starch// Tranfusion.-2006.-Vol. 46.-P. 1705-1711.

Severe injured patients

APACHE II score — **at admitting**

1 group n=80	2 group n=60	P
33,6 ± 1,3	33,8 ± 1,6	>0,05

ISS-score — **at admitting**

1group n=80	2group n=60	P
35,7 ± 3,8	36,2 ± 4,4	>0,05

Infusion therapy during traumatic shock 1 and 2 group

Cristalloids 15 ml/кg

Colloides 15 ml/кg

Red blood cells (Hb=80 г/л)

Fresh frozen plasma (PT>20 sec, PATT >45 sec)

Infusion therapy during MOF (1 group)

Cristalloides 15 ml/кg

Colloides 5 ml/kg

Red blood cells Hb<70 г/л

Fresh frozen plasma (PT>20 sec, PATT >45 sec)

Infusion therapy during MOF (2 group)

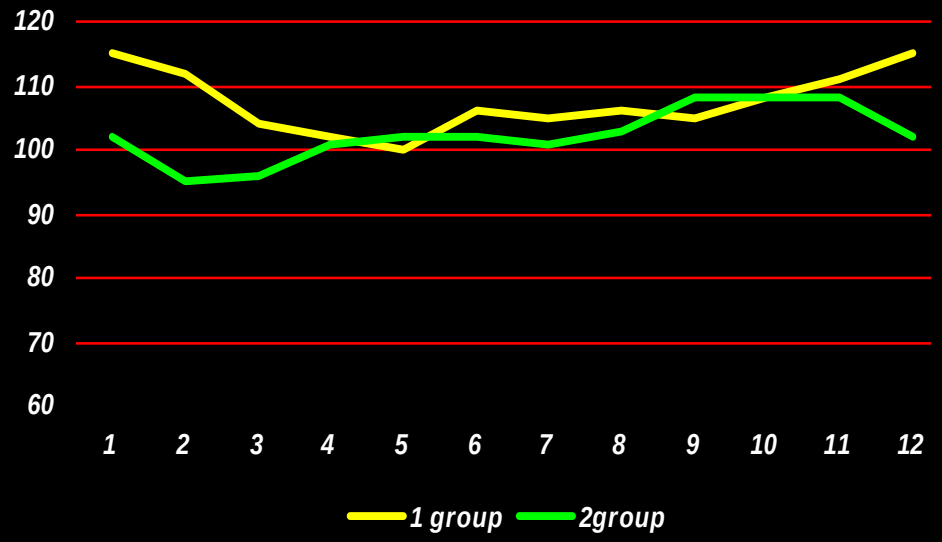
Cristalloides 20 ml/kg

In conditions of hypertermia- 5 ml/kg/day cristalloides

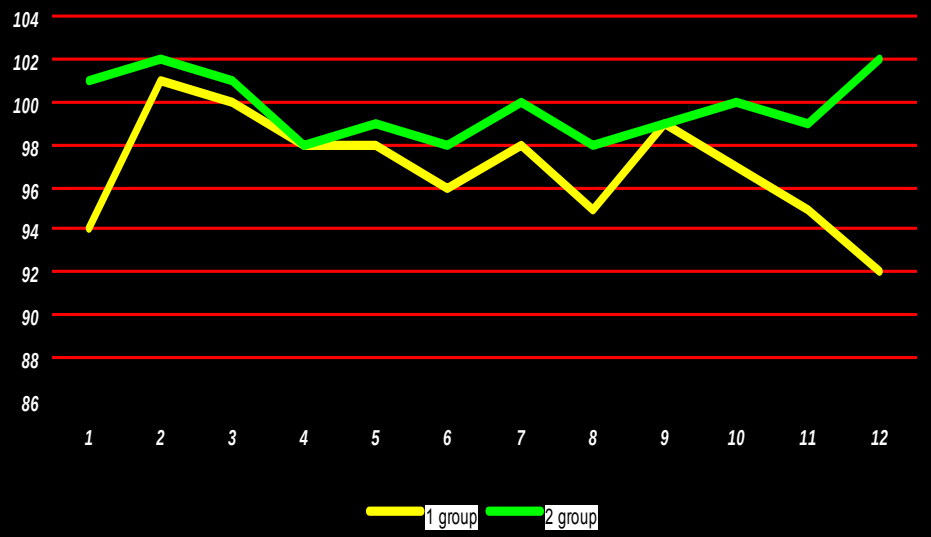
Red blood cells Hb<70 г/л

Fresh frozen plasma (PT>20 sec, PATT >45 sec)

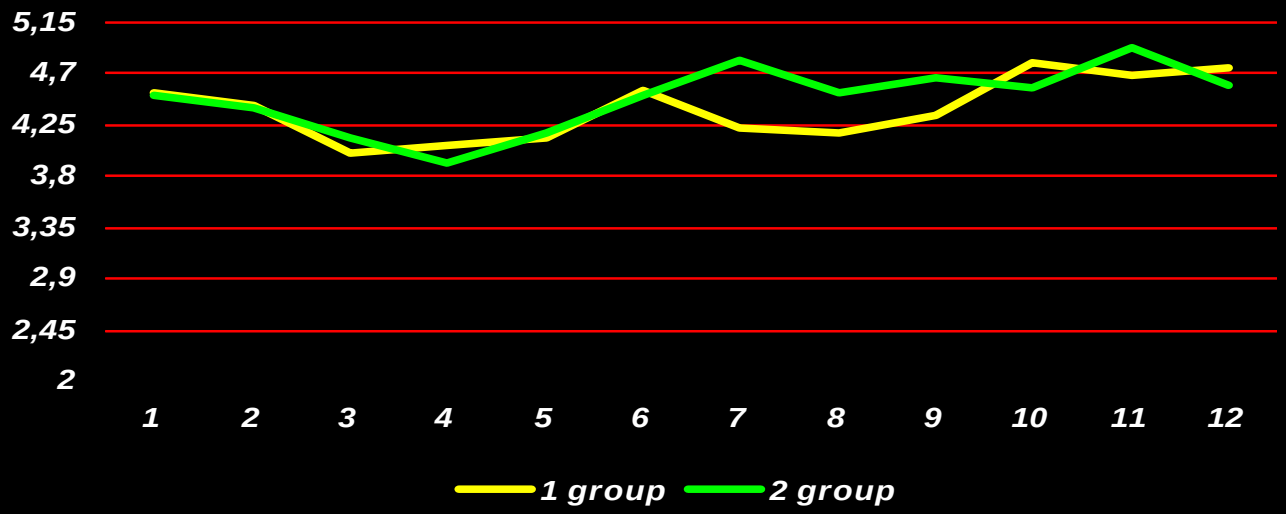
heart rate



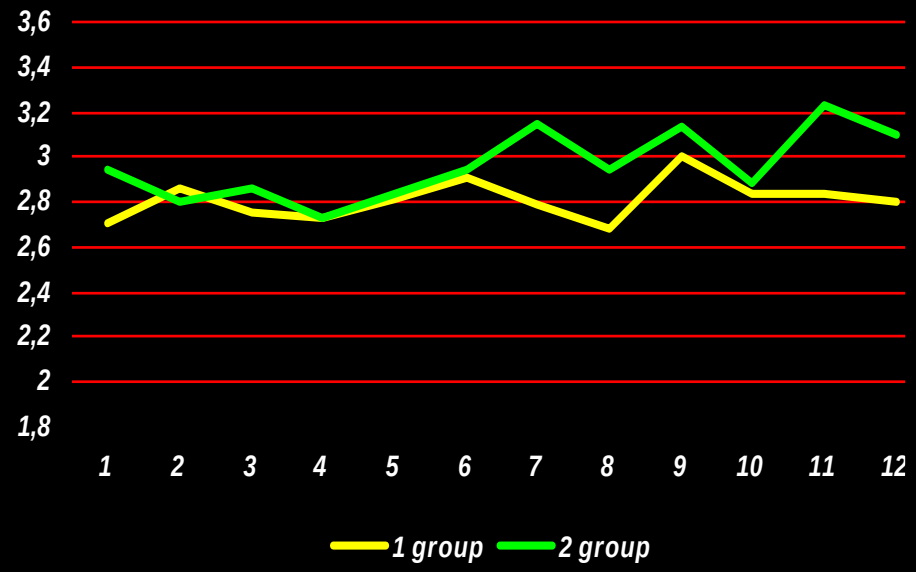
MAP



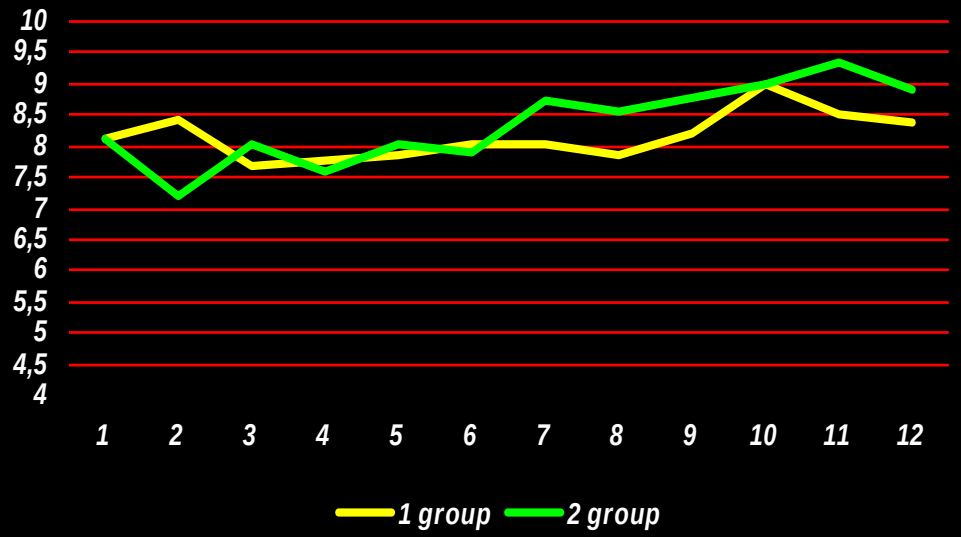
cardiac index



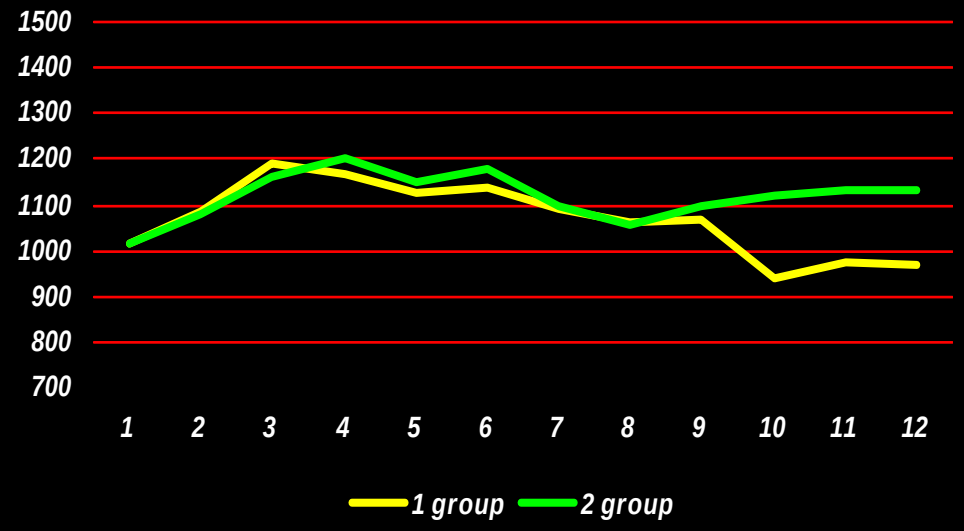
left ventricule contraction capacity



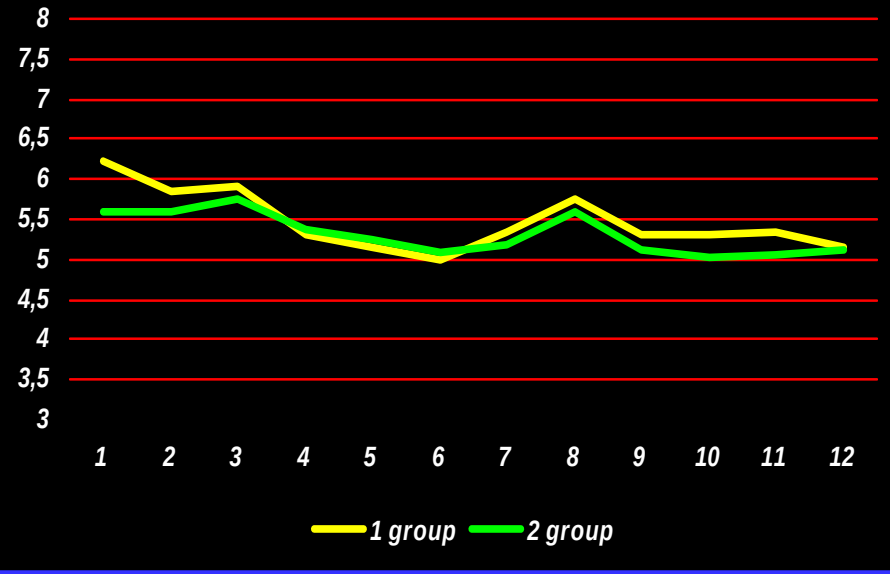
Cardiac output



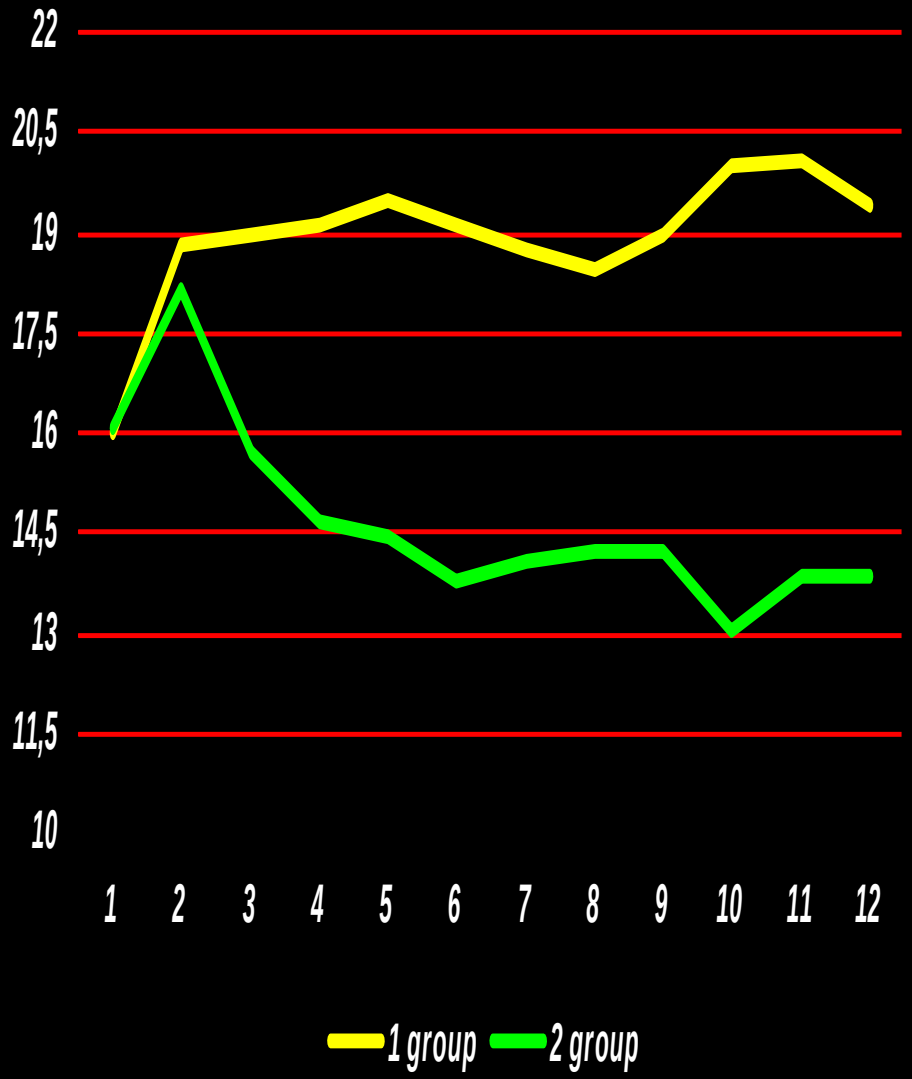
system vascular resistance



blood volume

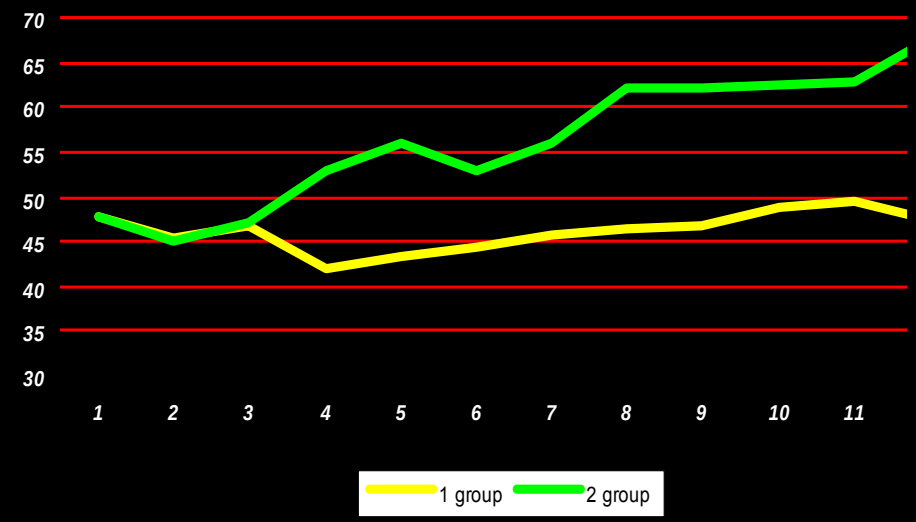


volume of extracellular fluid

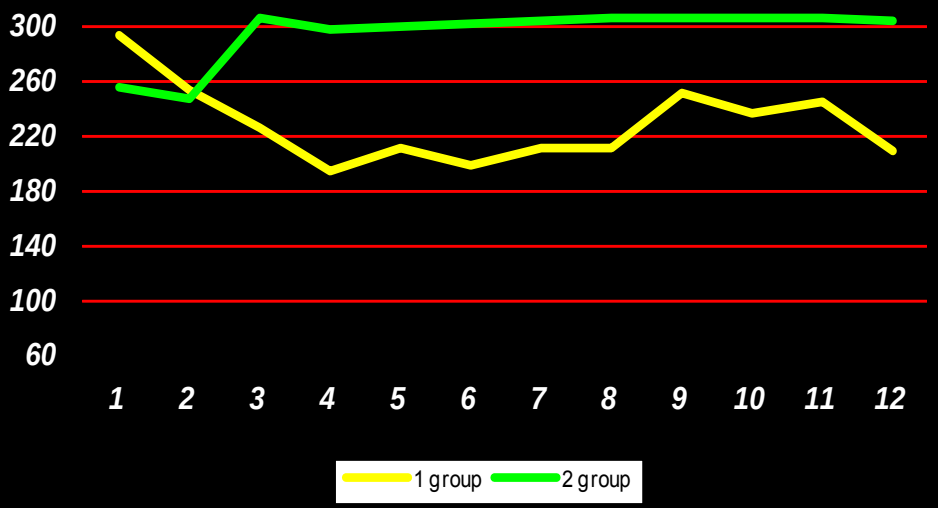


balance of extracellular fluid

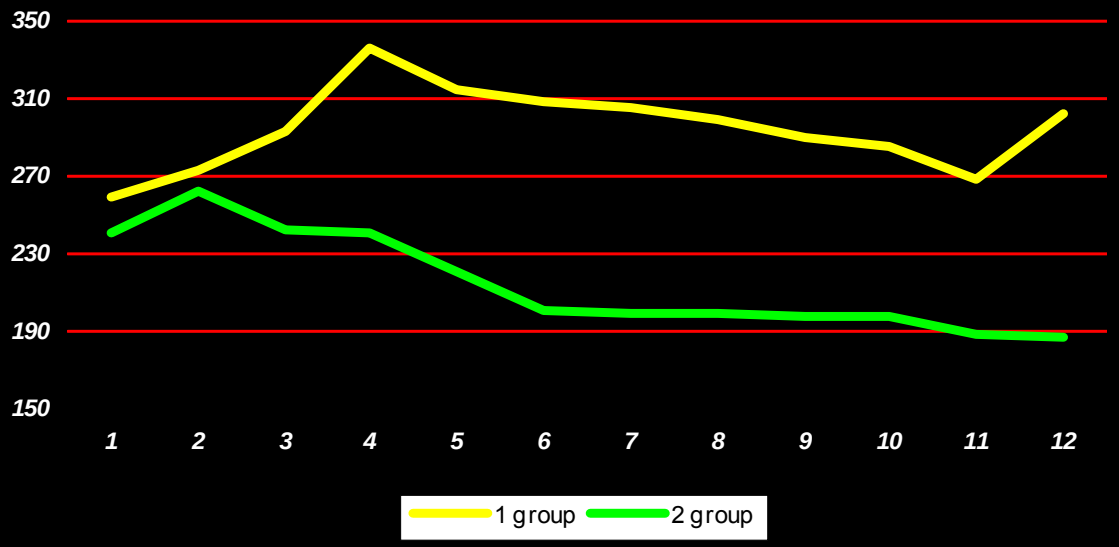
static compliance



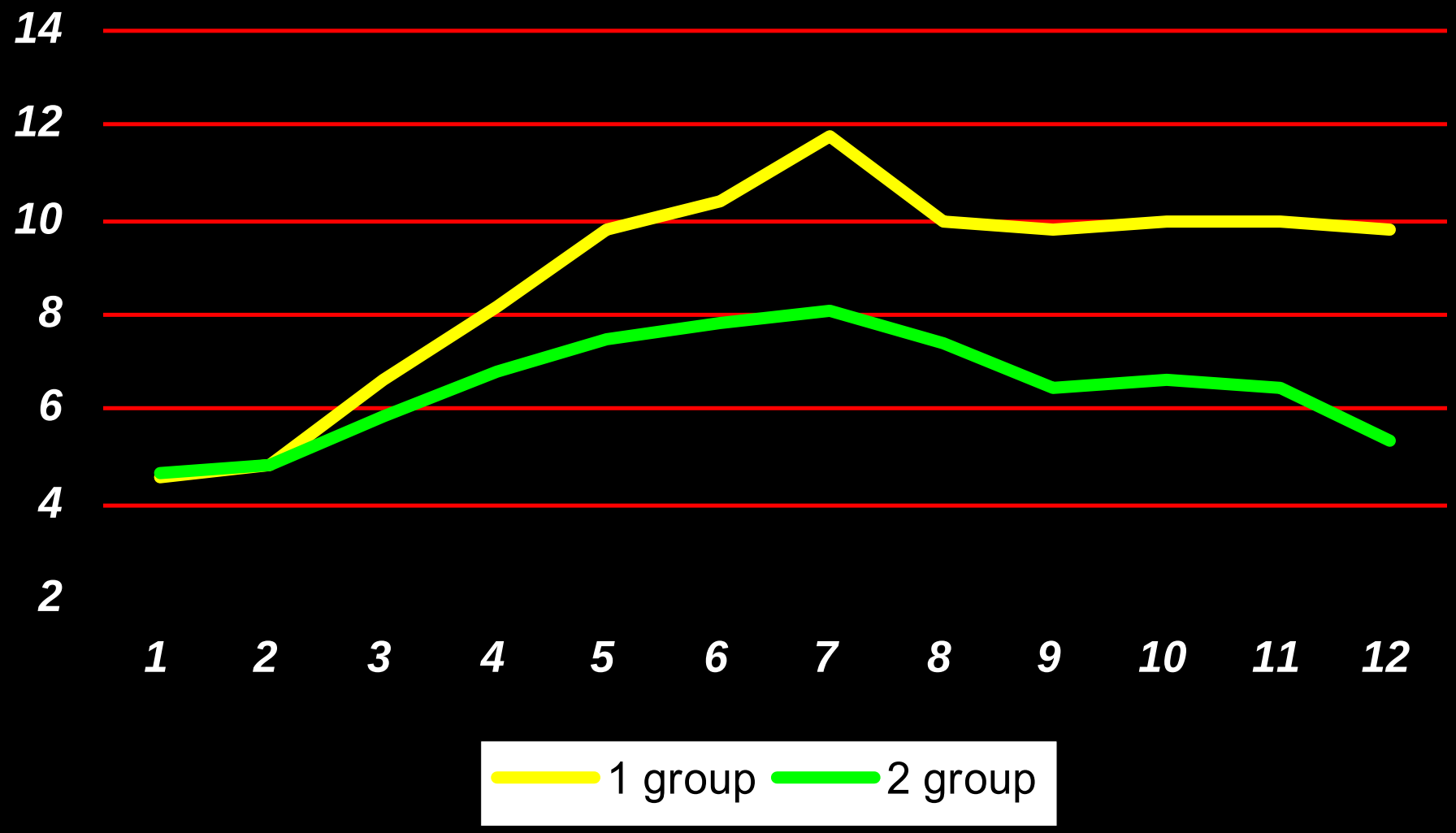
PaO2/FiO2



D(A-a)

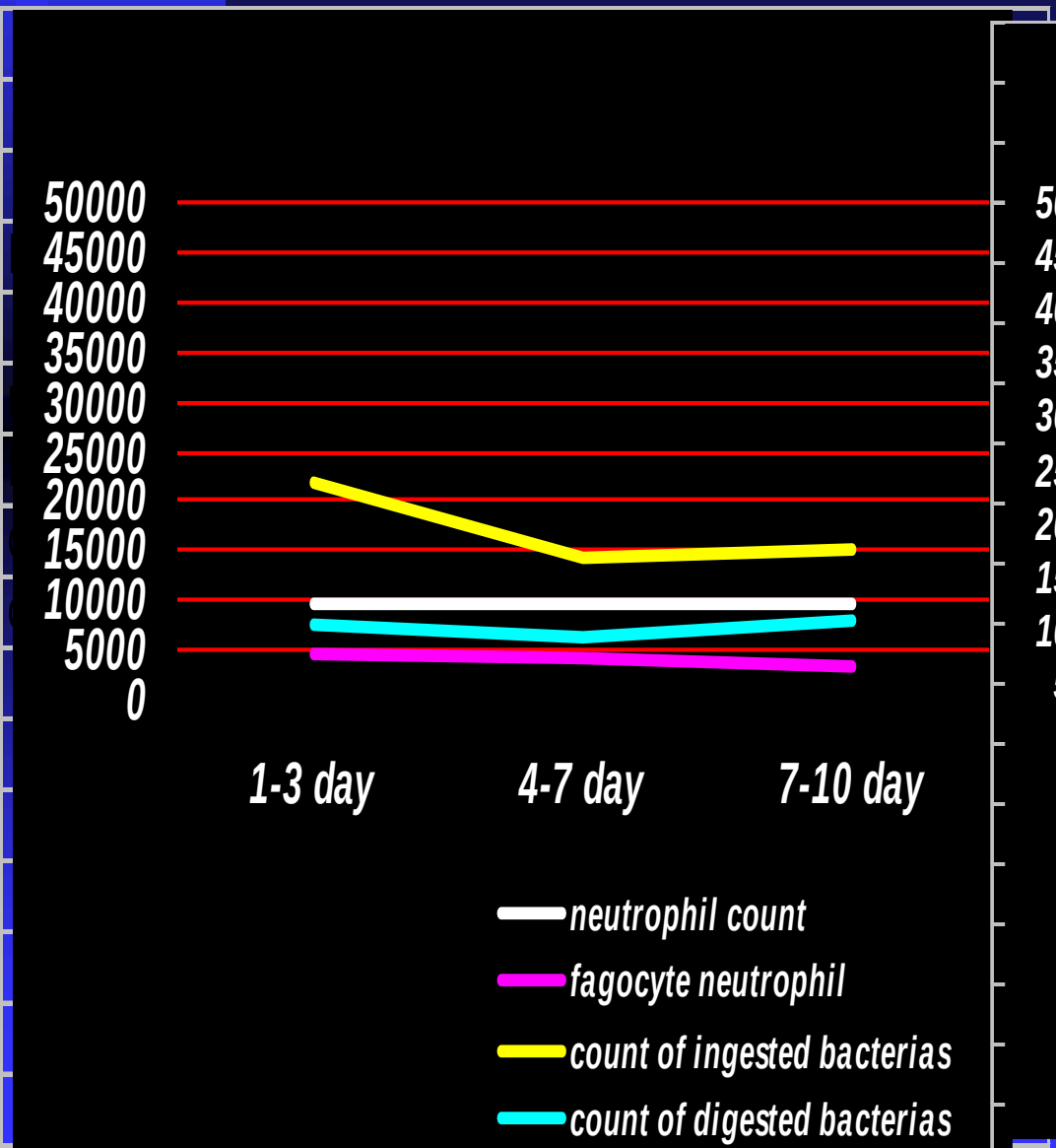


Lung Injury Score

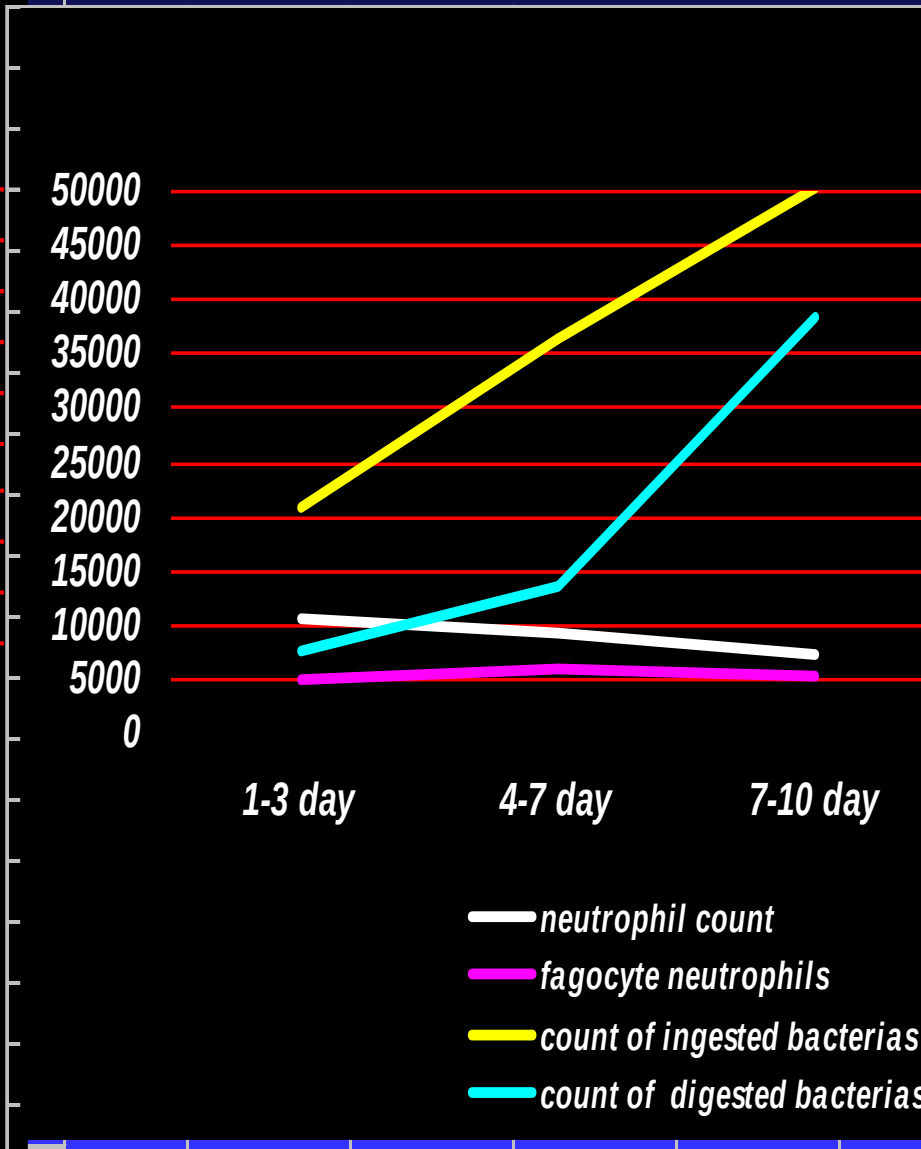


Innate immunity

1 group

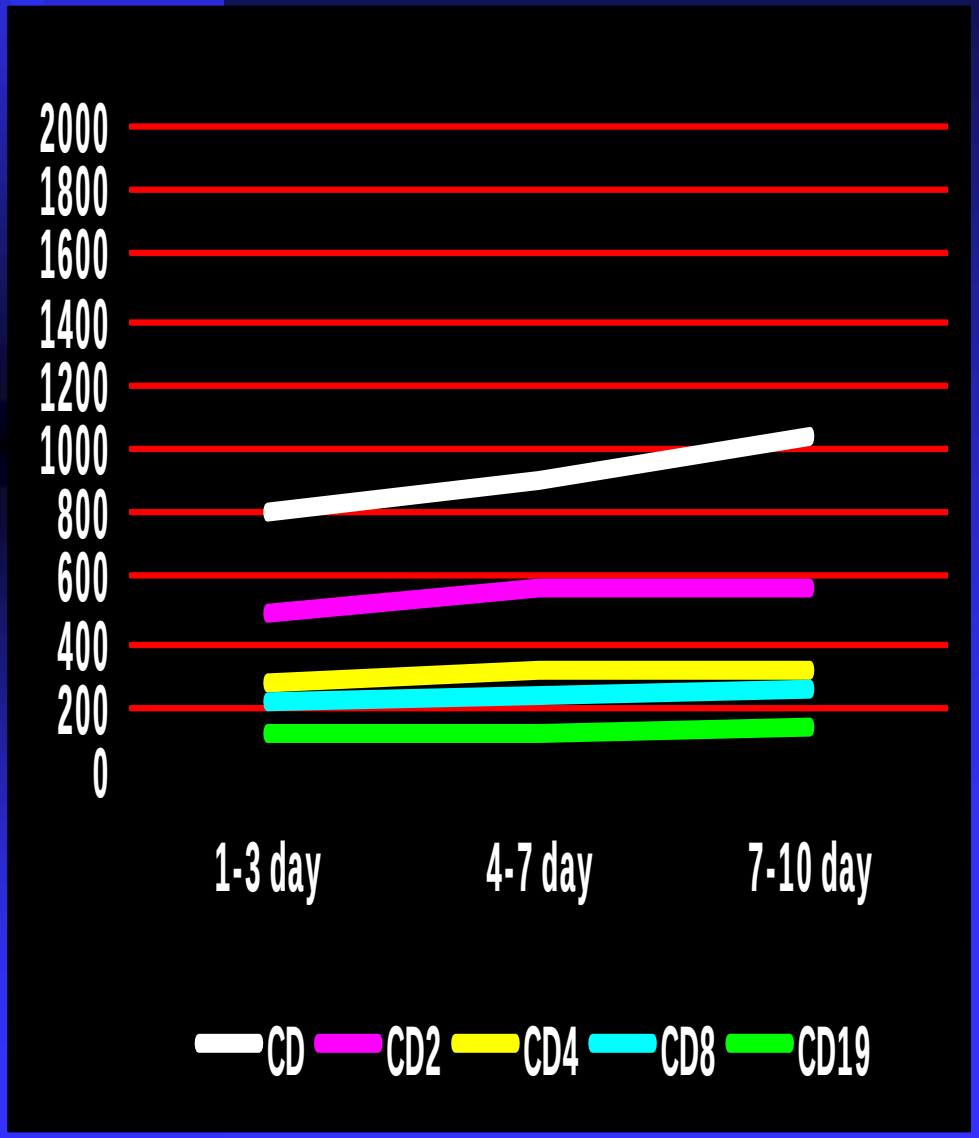


2 group

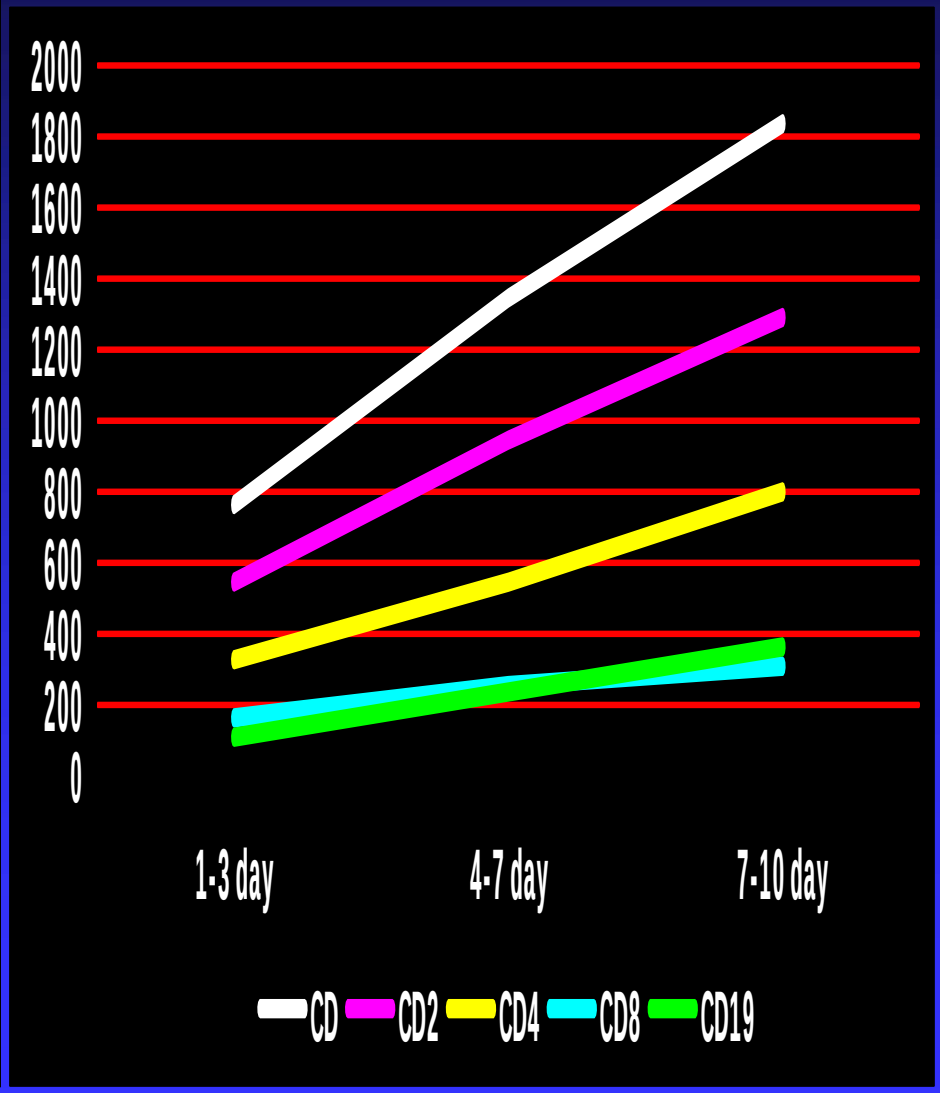


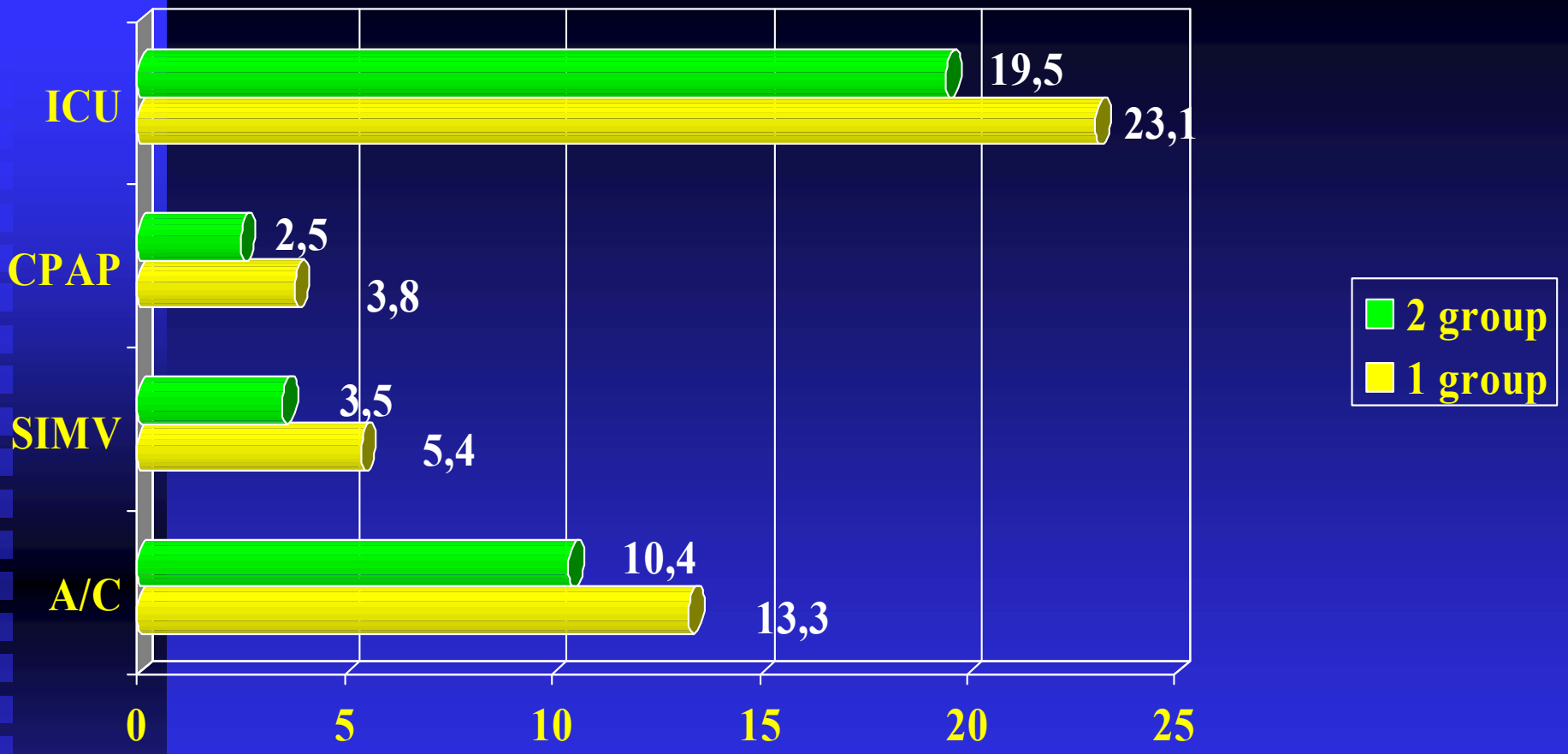
Cell immunity

1 group



2 group





28-day mortality

1 group- 62%

2 group-48%

THANKS FOR YOUR ATTENTION !