



The Very old Intensive care Patients – Perfusion (VIPPER) study

Sublingual microcirculatory assessment on admission independently predicts the outcome of old intensive care patients suffering from shock. **VIPSTUDY.ORG**

Methods

Inclusion criteria:

- Lactate > 2 mmol/L
- Vasoactive drugs despite adequate fluid resuscitation
- Age $\geq$ 80 years



Sublingual sidestream Darkfield microcopy (SDF) at ICU admission



Automatic analysis AVA 4.3 C



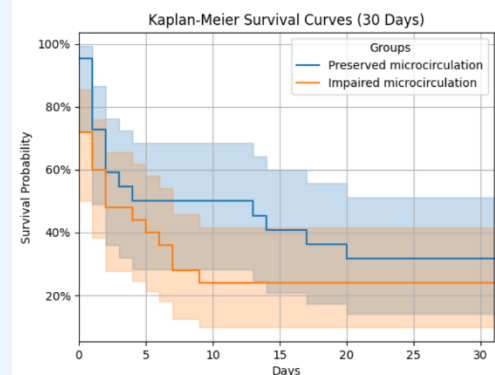
Median percentage of perfused small vessels: **83%**

Preserved
microcirculation:
24 patients

Impaired
microcirculation:
20 patients

Results

- 70% of the SDF-videos were *good or acceptable*
- **No safety issues**



Impaired microcirculation:

- **30-day mortality $\uparrow$** : 90% versus 63% ($p=0.036$)
- **HR 2.52 $\uparrow$** (95% CI 1.18 to 5.41, $p=0.018$)
- **Adjusted HR 3.3 $\uparrow$** (95%CI 1.2 to 8.9, $p=0.023$)
- **Length ICU stay $\downarrow$** (3 vs. 7 days, $p=0.015$)

No difference for

- limiting life-sustaining therapy
- lactate and its kinetics
- capillary refill time

Graphical abstract illustrating the research question, methods, and results of the VIPPER-study. Created with BioRender.com

Supplemental Figure 1: Graphical abstract