



STROKE

TBI

DEMENTIA

Increased safety of acute stroke treatment with Cerebrolysin®

Khasanova, D.R., Kalinin, M.N. Cerebrolysin® as an Early Add-on to Reperfusion Therapy: Risk of Hemorrhagic Transformation after Ischemic Stroke (CEREHETIS), a prospective, randomized, multicenter pilot study. BMC Neurol 23, 121 (2023).

- Significant reduction of hemorrhagic transformation
- Significant improvement of BBB integrity
- Significant reduction of infarct volume
- Significant improvement of imaging data

Now also
clinically proven

Cerebrolysin®

Reconnecting Neurons.
Empowering for Life.

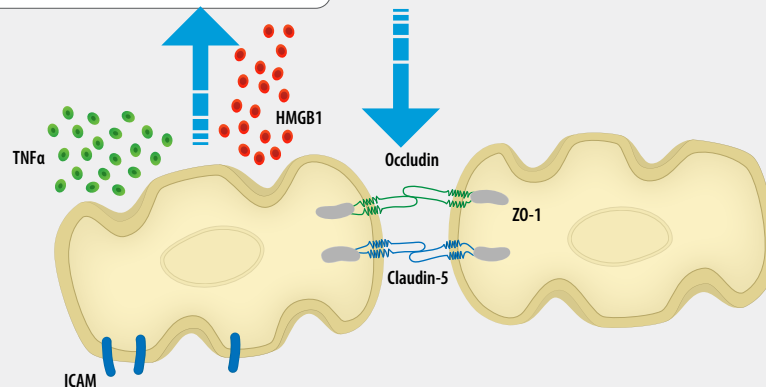
Complications after stroke treatment

GOLDEN STANDARD = RECANALISATION THERAPY
rtPA or thromectomy

**BUT it leads to hemorrhagic complications
and 60% of patients does not show expected clinical results**

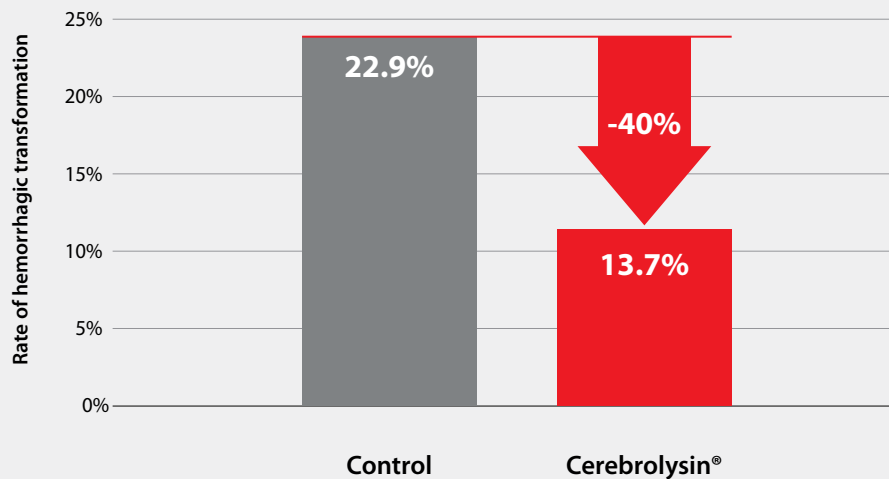
tPA or fibrin
significantly increases **inflammatory
and pro-coagulant proteins**
like HMGB1, TNF α , p65, ...

tPA or fibrin significantly
reduces tight junction proteins
like Occludin, Claudin-5, ZO-1



Increased safety of acute stroke treatment

Significant reduction of hemorrhagic transformation

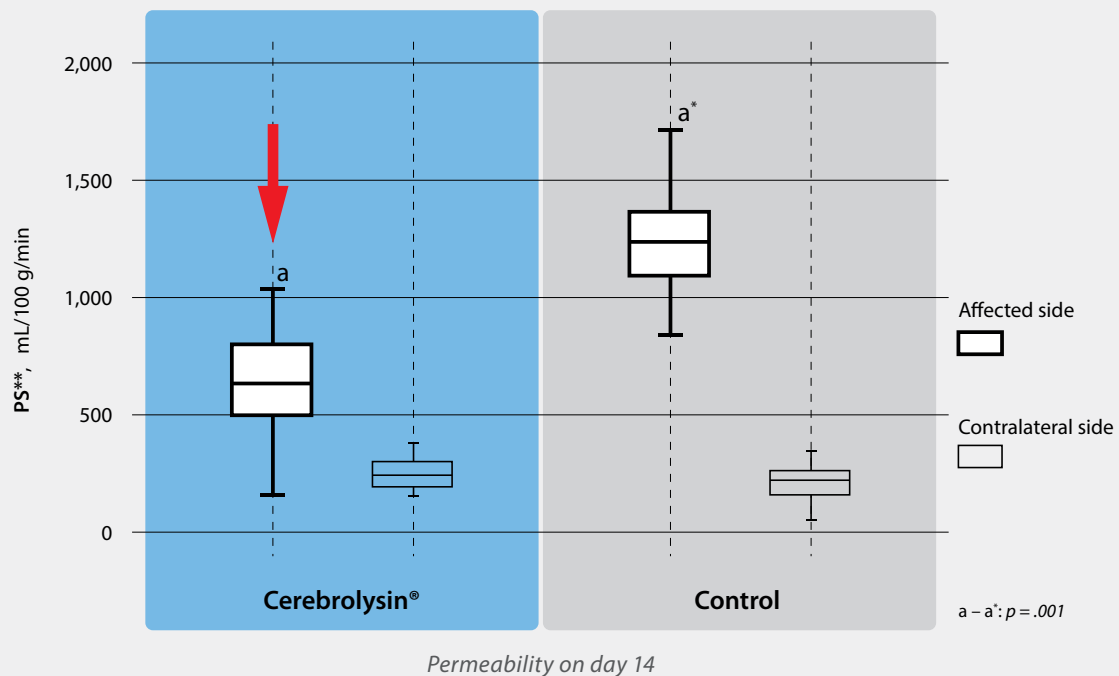


Rate of hemorrhagic complications, PP Analysis, day 14

- **Significantly lower rate** of hemorrhagic transformation (HT) with Cerebrolysin®
- **Only 13,7%** with hemorrhagic complications in Cerebrolysin® group vs. 22,9% in control group
- Cerebrolysin® **reduces** risk of HT **by -40%**

Now also clinically proven

Significant improvement of BBB* integrity



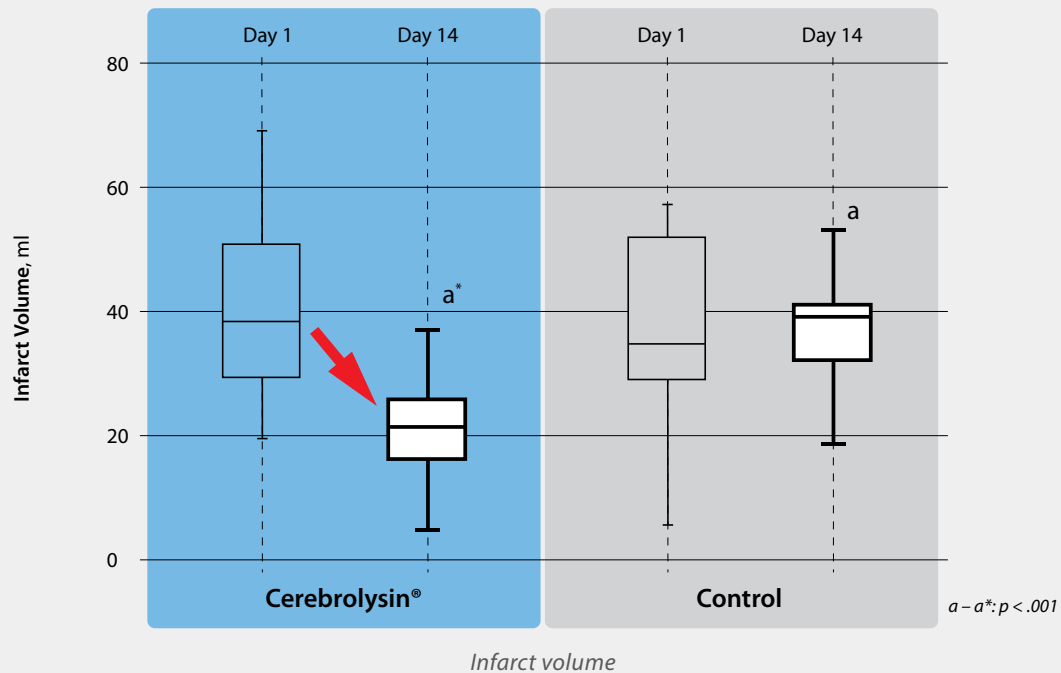
- BBB* permeability was measured by the well-known imaging marker PS**
- Cerebrolysin® significantly **reduces the BBB* permeability**
- Improvement by a **factor 2** in Cerebrolysin® group vs. placebo group
- **Cerebroprotective** and **BBB* stabilizing** activity clinically proven!

* BBB = Blood Brain Barrier

** PS = permeability-surface area product

Now also clinically proven

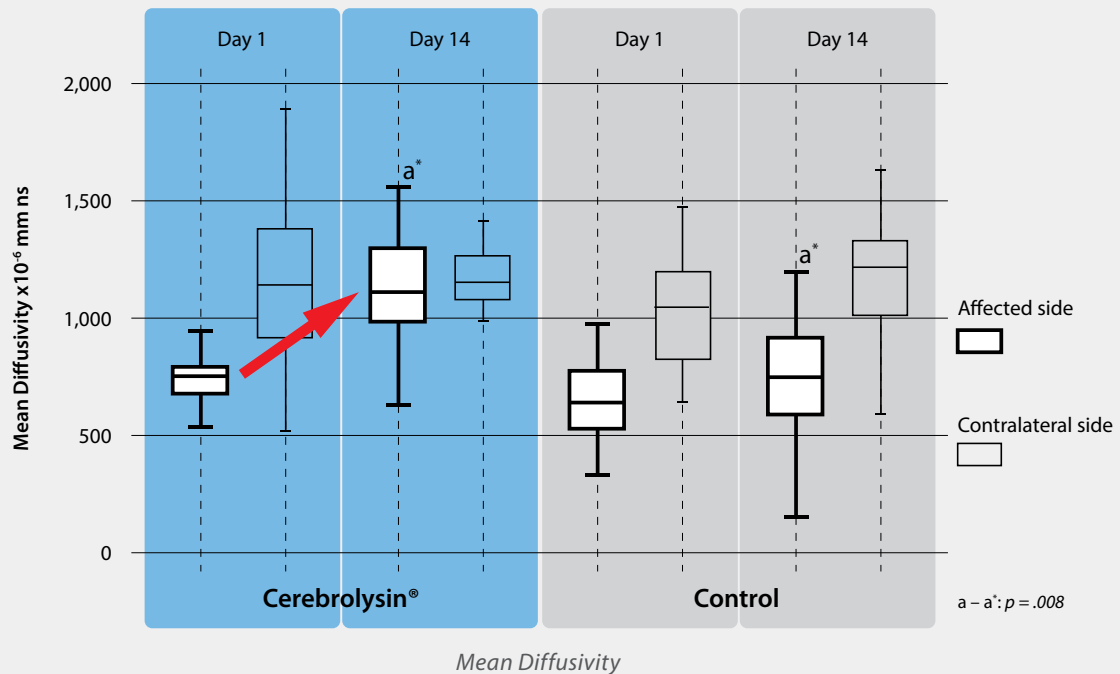
Significant reduction of infarct volume



- **Significant reduction of infarct volume** in Cerebrolysin® group
- Increased infarct volume in the placebo group
- Cerebrolysin® patients benefit from a **better quality of life**

Imaging data confirm

Significant improvement of DTI* data

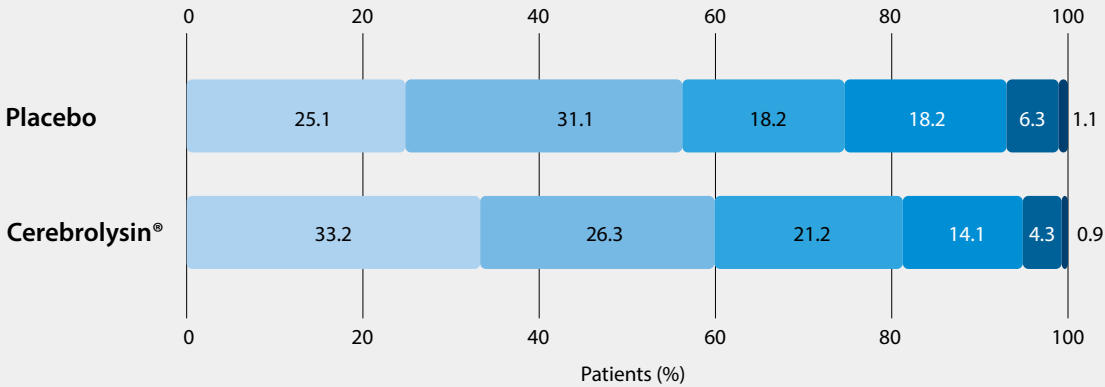


- Patients treated with Cerebrolysin® showed a **significant improvement of DTI* data** on day 14
- **Affected side very close to contralateral side in Cerebrolysin® group**
- **Big difference** in the placebo group

* DTI = Diffusion Tensor Imaging

Better functional outcome

Improvement of Activities of daily living with Cerebrolysin®



Score

0 No symptoms 1 No significant disability 2 Slight disability 3 Moderate disability 4 Moderately severe disability 5 Severe disability

mRS on day 90

- Better mRS-shift in Cerebrolysin® group on day 90
- **No negative drug interaction** with rtPA

Start with Cerebrolysin® directly after recanalization!

- The **risk of HT** is established to be the highest **on day 1 after stroke** onset, and it keeps being significant for the next 14 days
- Consequently, **pharmacological prevention** of HT should be **started as early as possible and should be continued for at least 2 weeks**

Daily dosage	Initiation of treatment	Treatment Duration
20 – 50 ml	As soon as possible Directly after recanalization	10 – 21 days

Cerebrolysin® as an Early Add-on to Reperfusion



Title: Cerebrolysin® as an Early Add-on to Reperfusion Therapy: Risk of Hemorrhagic Transformation after Ischemic Stroke (CEREHETIS), a prospective, randomized, multicenter pilot study.

Patients: 341 patients (126 Cerebrolysin® group vs. 215 Control group)

Treatment: 30ml/day, 14 days

Author: Khasanova, et al. 2023

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