



UKS
Saarland University
Medical Center

ICCA 2018

Postinterventional stroke management

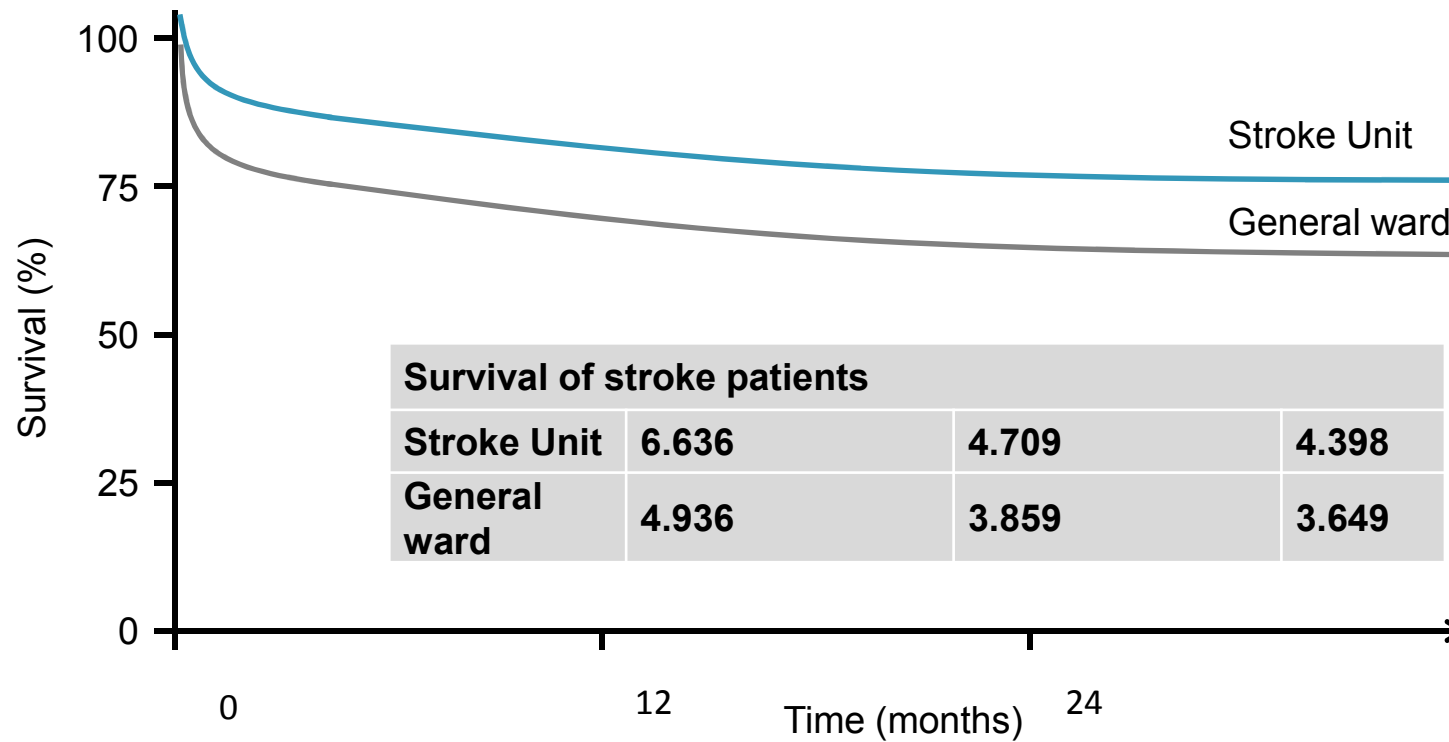
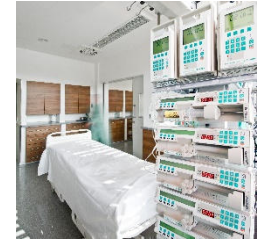
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Stroke Unit

- specialized
- team approach
- interdisciplinary team
- monitoring of physiological parameter
- 24/7
- cooperation between neurologist, neuro-radiologist, neurosurgeons, cardiologists, anesthesiologists, vascular surgeons...

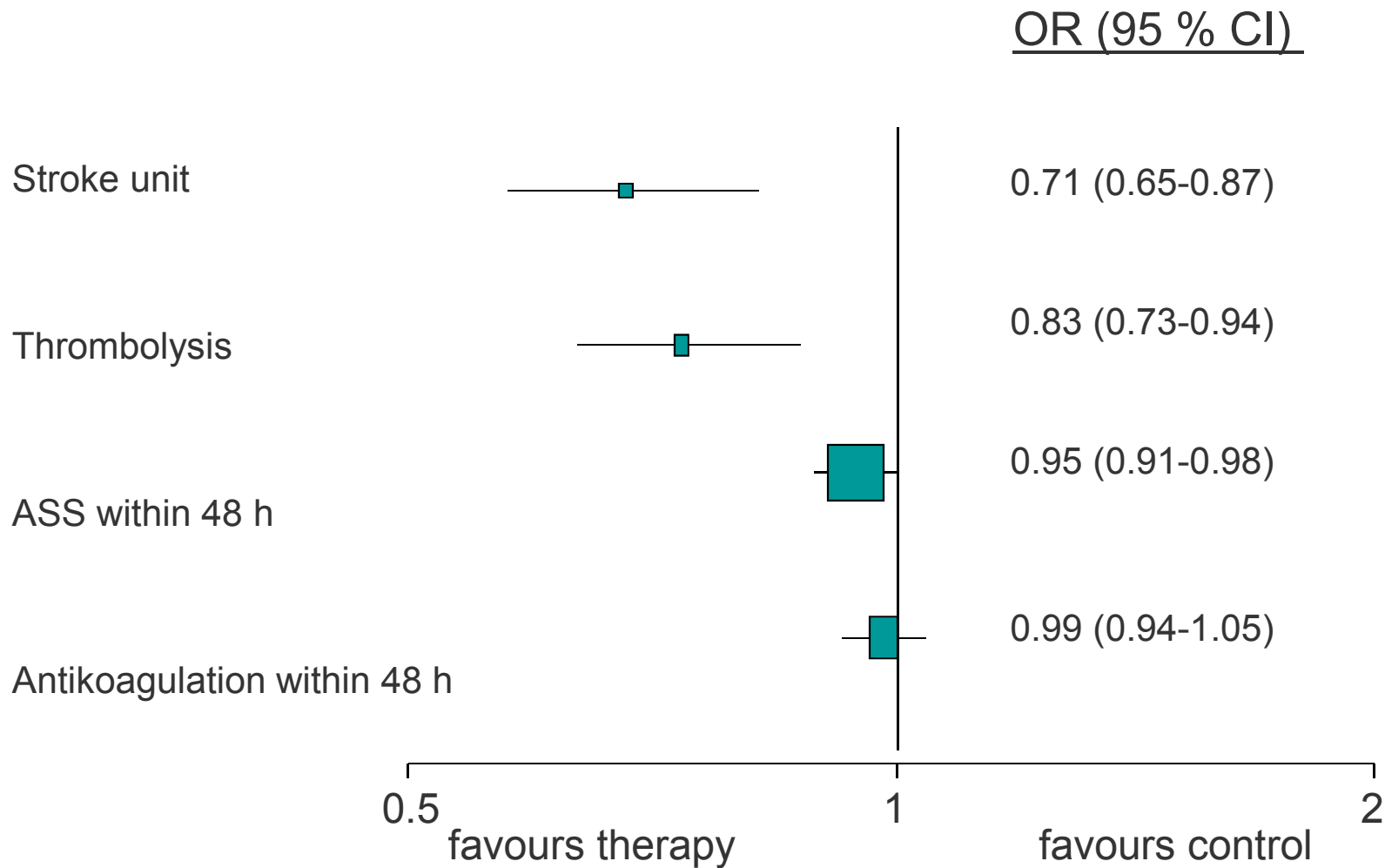


Stroke units save lives



Candelise et al. Lancet 2007

Effects on death and disability after 3-6 month



Stroke: key treatments

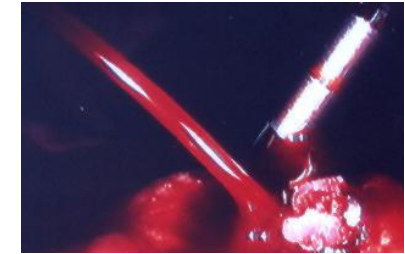
1. Adjusting physiological parameters
2. (Thrombolysis)
3. Early secondary prevention
4. Prevention and treatment of complications



Complication management

- Angiographic complications
- Contrast-induced nephropathy
- Cardiovascular complications (myocardial infarction, hyper-, hypotension)
- Hyperglycaemia
- Hyperthermia
- Brain swelling

Angiographic complications



- 3-4% major access site complications
- 1-5% require blood transfusion
- 1% require surgical interventions
- Risk factor: elevated age

Table 2 Rates of Arterial Access Complications in Acute Ischemic Stroke Trials

Trial	Rate of Arterial Access Complications	
PROACT II n = 180 (IAT = 121)	7% r-proUK group 17% control group	5
MELT n = 114 (IAT = 57)	Not reported	F
IMS I n = 80 (IAT = 62)	2.5% pseudoaneurysms at the puncture site (2 patients) 3.7% severe oozing or hematomas (3 patients)	1
IMS II n = 81 (IAT = 55)	1.2% femoral artery pseudoaneurysm (1 patient)	1
MERCI n = 141	2.1% clinically significant groin hemorrhages (3 patients)	F
Multi MERCI n = 164	Not reported	F
Penumbra n = 125; pivotal trial	Not reported	C
Penumbra POST trial n = 157	1.9% peripheral hemorrhage, access site hematoma (3 patients)	

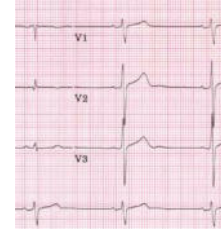
Contrast-induced nephropathy

- Overall risk: 5%
- Long term risk for dialysis: < 1%
- Positive effects for
 - *Saline infusion*
 - *Isotonic bicarbonate infusion (150 ml bicarbonate in 850 ml G5% or sterile water)*
 - *Acetylcystein ???*



Panu et al., JAMA, 2006;
Barrett and Parfrey, N Engl J Med, 2006

Cardiovascular complications



- Myocardial infarction, cardiac arrhythmia

(Kocan, 1999; Kolin and Norris, 1984)

- Hypertension/Hypotension

- RR > 180 mm Hg: ↑ risk of poor outcome by 23%
(Johnston and Mayer, 2003)
- RR < 100 mm Hg: ↑ risk of poor outcome or death
(Castillo et al., 2004)

Hyperglycaemia



- Poorer outcome
- ESO guidelines: treatment of BG >180mg%

Table 1.

Univariate Analyses of Sample in Terms of Survival at 30 Days

	Alive at 30 Days (n=130)	Dead Within 30 Days (n=53)	OR	P
Male, %	45	36	0.7	.31
Mean age, y (range)	75 (45-94)	81 (50-95)0008
Age >75 years, %	56	77	2.7	.01
Glycemia, mmol/L (range)	6.7 (3.3-25.2)	9.3 (5.3-23.4)0001
Glycemia >6.7 mmol/L, %	34	77	6.6	.00001
Drowsy or comatose, %	10	62	14.5	.00001
Febrile in first 7 days, %	32	70	5.0	.00001
Median MTEMP, °C	37.6	38.60002
Onset of fever within 2 days, %	58	70	4.2	.0001

Hyperthermia

- Direct increase of ICP
- Poorer outcome: 1° C↑: elevated relative risk by 2.2: ↑
- ESO guidelines: treatment of >37.5° C (paracetamol)



Management of brain swelling

CPP (cerebral perfusion pressure) aim: 65 - 90 mmHg
(CPP = MAP – ICP)

- Osmotherapeutics: increase CPP and O₂ supply
- Deep sedation
- Decompressive craniectomy
- Hypothermia ???

Thank you !