

**Electronic Supplemental Material - Brain Tissue Oxygenation-Guided Therapy
and Outcome in Traumatic Brain Injury: a single-center matched cohort study**

Table S1: Logistic regression for the association of PbtO₂ monitoring and hospital mortality.

	Univariable analysis OR (95% CI)	Multivariable analysis OR (95% CI)
Age	1.05 (1.02-1.07)	1.06 (1.03-1.10)
GCS on admission	0.93 (0.83-1.03)	0.83 (0.72-0.96)
ICHT	7.23 (2.65-19.71)	9 (2.69-30.9)
PbtO ₂ monitoring	0.51 (0.22-1.18)	1.33 (0.46-3.87)

GCS: Glasgow coma scale; ICHT: intracranial hypertension; PbtO₂: brain tissue oxygenation monitoring

Table S2: Logistic regression for the association of PbtO₂ monitoring and unfavorable neurological outcome (GOS 1-3) at 3 months.

	Univariable analysis OR (95% CI)	Multivariable analysis OR (95% CI)
Age	1.04 (1.01-1.06)	1.06 (1.03-1.10)
GCS on admission	0.86 (0.77-0.96)	0.74 (0.63-0.88)
ICHT	4.84 (1.99-11.72)	4.93 (1.65-14.71)
PbtO ₂ monitoring	0.43 (0.19-1.01)	0.71 (0.25-2.03)

GCS: Glasgow coma scale; ICHT: intracranial hypertension; PbtO₂: brain tissue oxygenation monitoring

Table S3: Characteristics of patients admitted from February 2017 to December 2019. Data are presented as mean (\pm SD), count (%) or median (25th-75th percentiles).

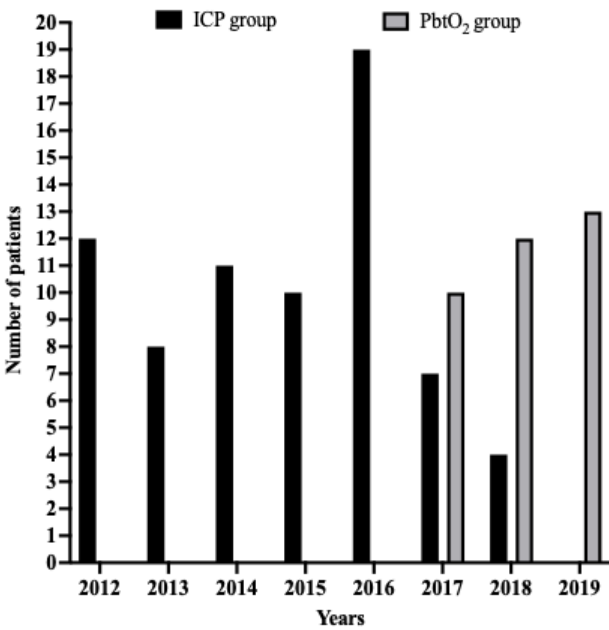
	ICP-group (N=24)	ICP/PbtO ₂ -group (N=35)	p value
Age, years	55 (\pm 21)	45 (\pm 17)	0.02
Male gender, n (%)	14 (58)	24 (69)	0.58
Arterial hypertension, n (%)	10 (42)	7 (20)	0.09
Diabetes mellitus, n (%)	2 (8)	2 (6)	0.99
Heart disease, n (%)	1 (4)	2 (6)	0.99
Previous neurological disease, n (%)	1 (4)	2 (6)	0.99
Alcohol use, n (%)	7 (29)	10 (29)	0.99
Smoking, n (%)	6 (25)	5 (14)	0.33
COPD, n (%)	0	0	-
Liver cirrhosis, n (%)	2 (8)	1 (3)	0.56
Cancer, n (%)	1 (4)	1 (3)	0.99
Chronic kidney disease, n (%)	1 (4)	0	0.41
APACHE score	16 (16-21)	20 (17-23)	0.18
SOFA score	9 (4-10)	8 (8-10)	0.60
GCS on admission	5 (3-10)	5 (3-7)	0.84
Marshall score, n (%)			
1	0	0	0.45
2	1 (4)	2 (6)	
3	1 (4)	1 (3)	
4	4 (17)	2 (6)	
5	17 (71)	30 (86)	
6	1 (4)	0	
Reacting pupils, n (%)	13 (54)	26 (74)	0.16
Traumatic SAH, n (%)	22 (92)	28 (80)	0.29
Epidural Hematoma, n (%)	15 (63)	30 (86)	0.06
Hypotension, n (%)	6 (25)	16 (46)	0.17
Hypoxemia, n (%)	13 (54)	21 (60)	0.79
Sodium, mmol/L	140 (138-142)	137 (135-140)	0.04
Glucose, mg/dL	134 (116-177)	131 (122-167)	0.62
Hemoglobin, g/dL	12.2 (10.3-14.5)	12.2 (10.3-14.5)	0.88
Mechanical ventilation, n (%)	24 (100)	35 (100)	-
Vasopressors, n (%)	19 (79)	33 (94)	0.11
Inotropes, n (%)	3 (13)	6 (17)	0.73
RRT, n (%)	0	1 (3)	0.99
EVD, n (%)	24 (100)	27 (77)	0.02
Intracranial hypertension, n (%)	18 (75)	16 (46)	0.03
Brain tissue hypoxia, n (%)	NA	24 (69)	-
Seizures, n (%)	7 (29)	8 (23)	0.76
TIL score basic			
1	6 (25)	9 (26)	0.42
2	9 (38)	7 (20)	
3	4 (17)	6 (17)	
4	5 (21)	13 (37)	
Osmotic therapy, n (%)	14 (58)	18 (51)	0.79

Hypothermia, n (%)	7 (29)	8 (23)	0.76
Barbituric, n (%)	3 (13)	4 (11)	0.99
Decompressive craniectomy, n (%)	5 (21)	11 (31)	0.55
ICU LOS, days	6 (2-14)	16 (9-25)	0.002
Hospital LOS, days	12 (2-50)	30 (14-66)	0.03
GCS at ICU discharge	3 (3-12)	10 (3-14)	0.36
ICU death, n (%)	13 (54)	13 (37)	0.29
Hospital death, n (%)	13 (54)	13 (37)	0.29
GOS at 3 months	1 (1-3)	3 (1-4)	0.15

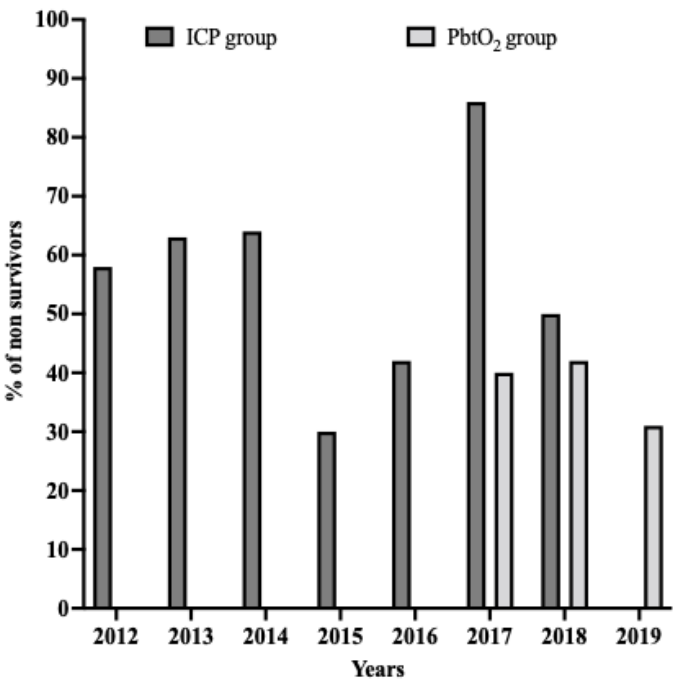
COPD = chronic obstructive pulmonary disease; APACHE: acute physiology and chronic health examination; SOFA: sequential organ failure assessment; GCS: Glasgow coma scale; GOS: Glasgow outcome scale; ICU: intensive care unit; LOS: length of stay; TIL: therapy intensity level; RRT: renal replacement therapy; EVD: external ventricular drainage; SAH : subarachnoid hemorrhage

Supplemental Figure S1: Panel A) Number of patients included in the study each year, according to the monitoring strategy (ICP or ICP/PbtO₂); Panel B) Percentage of non-survivors each year, according to the monitoring strategy (ICP or ICP/PbtO₂); Panel C) Percentage of patients with unfavorable neurological outcome at 3 months (Glasgow outcome scale 1-3) each year, according to the monitoring strategy (ICP or ICP/PbtO₂).

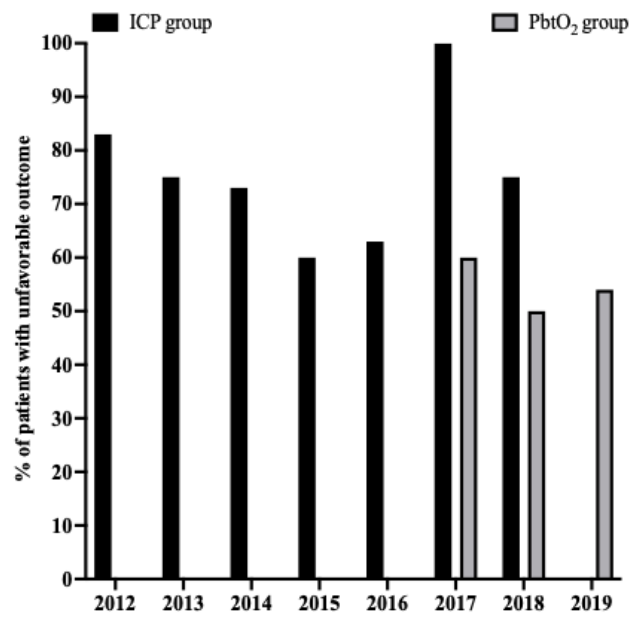
A)



B)



C)



Supplemental Figure S2: Kaplan Meier curve of survival in ICP and ICP/PbtO₂ group.

