



Potřebuje každý závažný úraz
iniciálně CT vyšetření?

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AXIOM

ZÁVAŽNÝ ÚRAZ \neq MANDATORNÍ CT

PH/ATLS

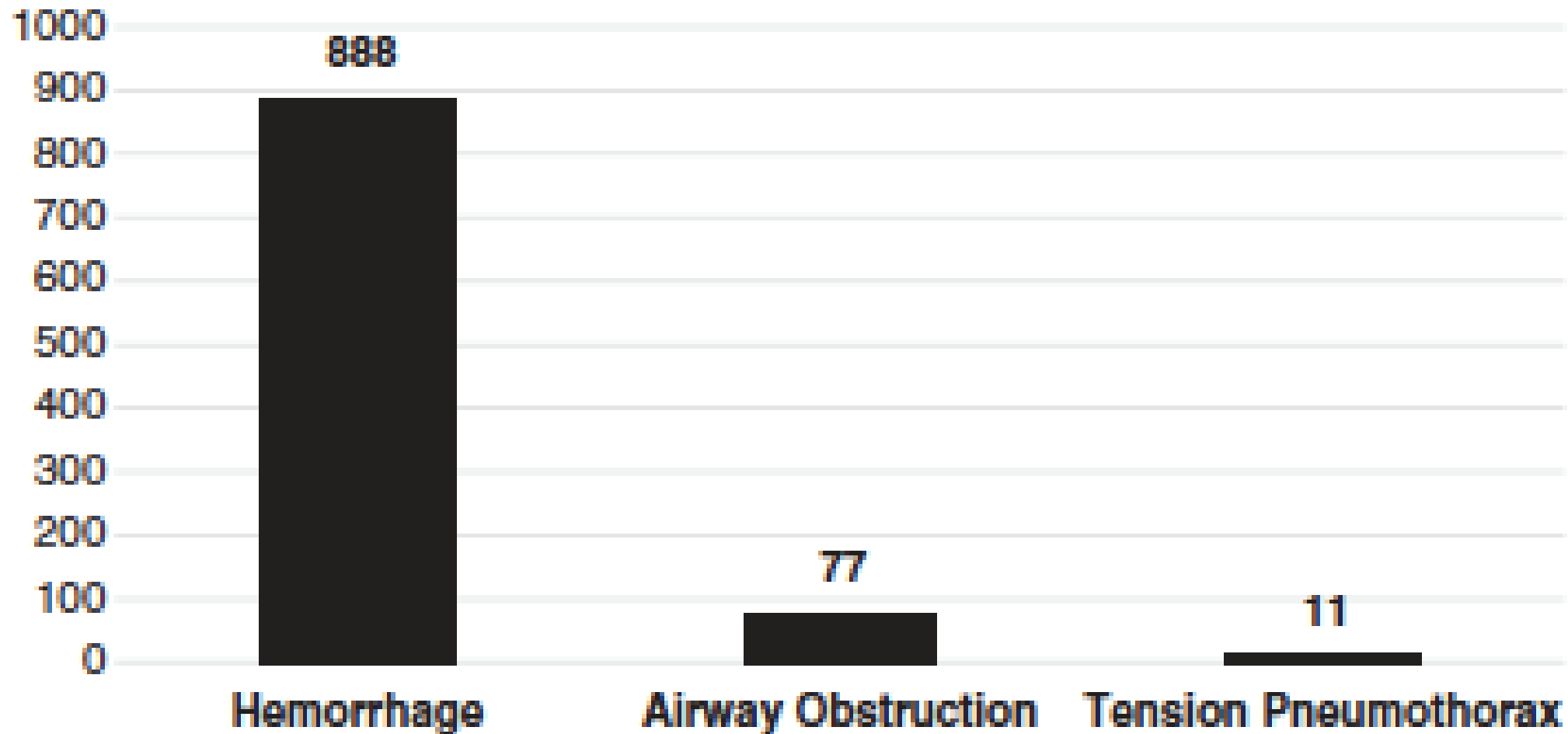
- **eX**ternal haemorrhage
- **A**irway with restriction of cervical spine motion
- **B**reathing and ventilation
- **C**irculation with hemorrhage control
- **D**isability: Neurological status
- **E**xposure / Environmental control

Principy péče o pacienty se závažným úrazem

- Dodržovat ABCDE koncept v rámci celého vyšetřování a péče
- Léčba podle závažnosti s minimem prostředků
- Zásadní je pouze pracovní diagnóza
- Čas!

B

Potentially Survivable Physiologic Cause of Death



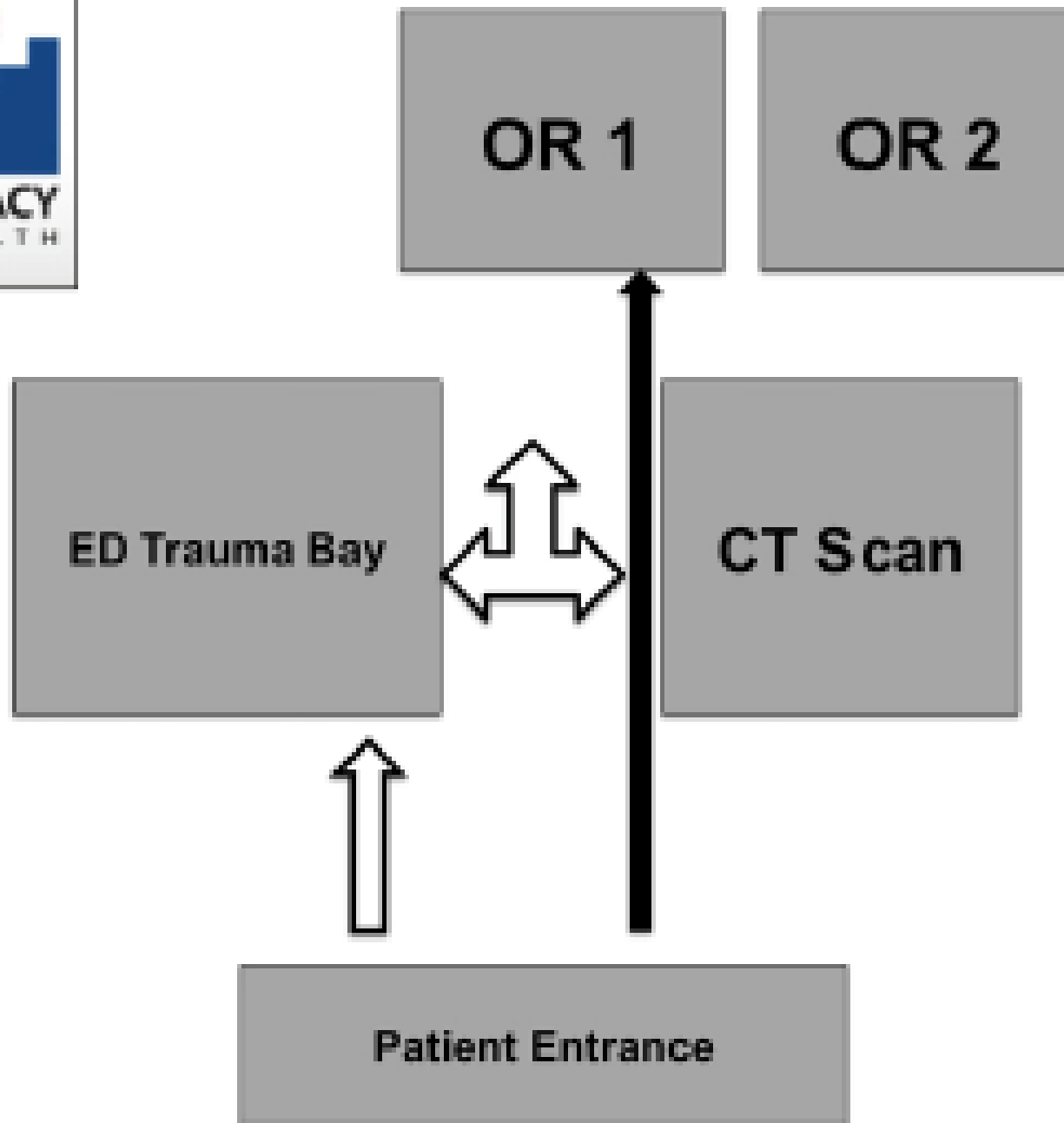
PH/ATLS

- **eX**ternal haemorrhage
- **A**irway with restriction of cervical spine motion
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Trauma tým

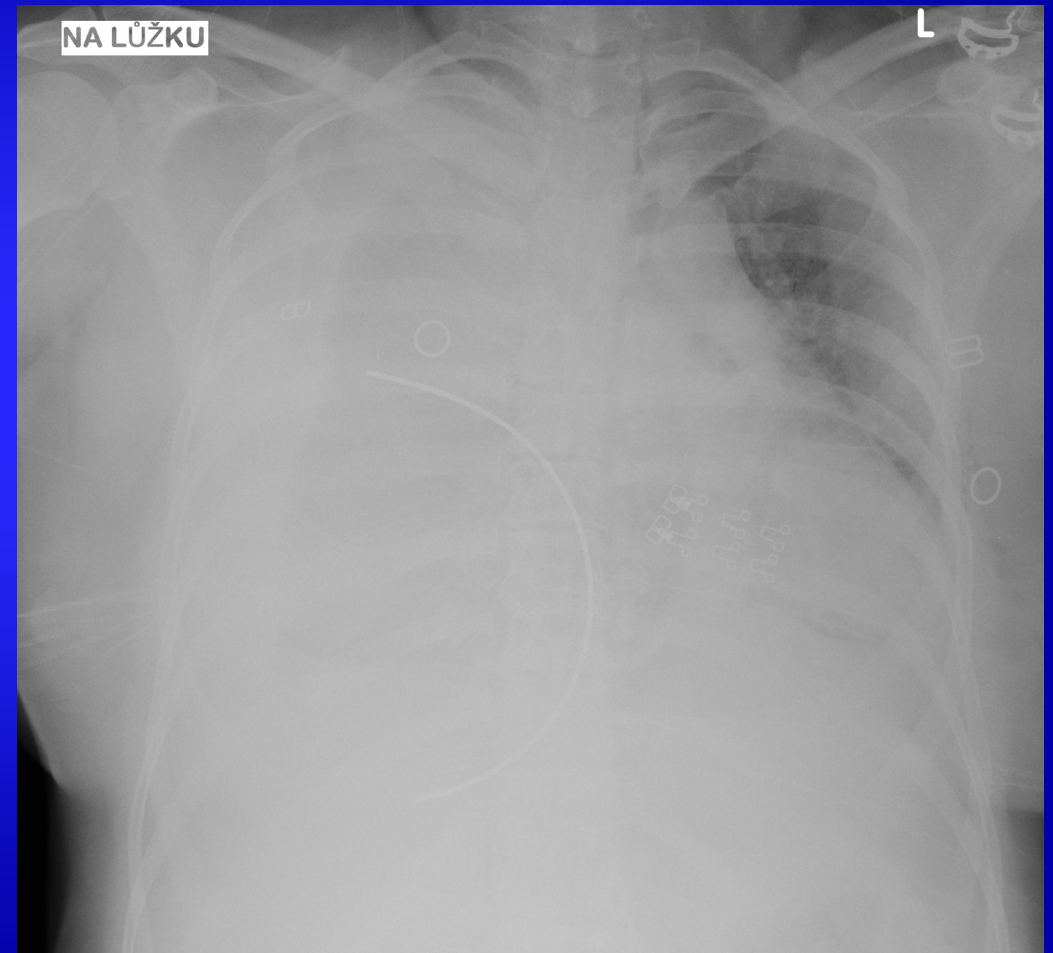
- Jasně dedikovaný pouze pro trauma
- Přesně dané úlohy jednotlivých členů

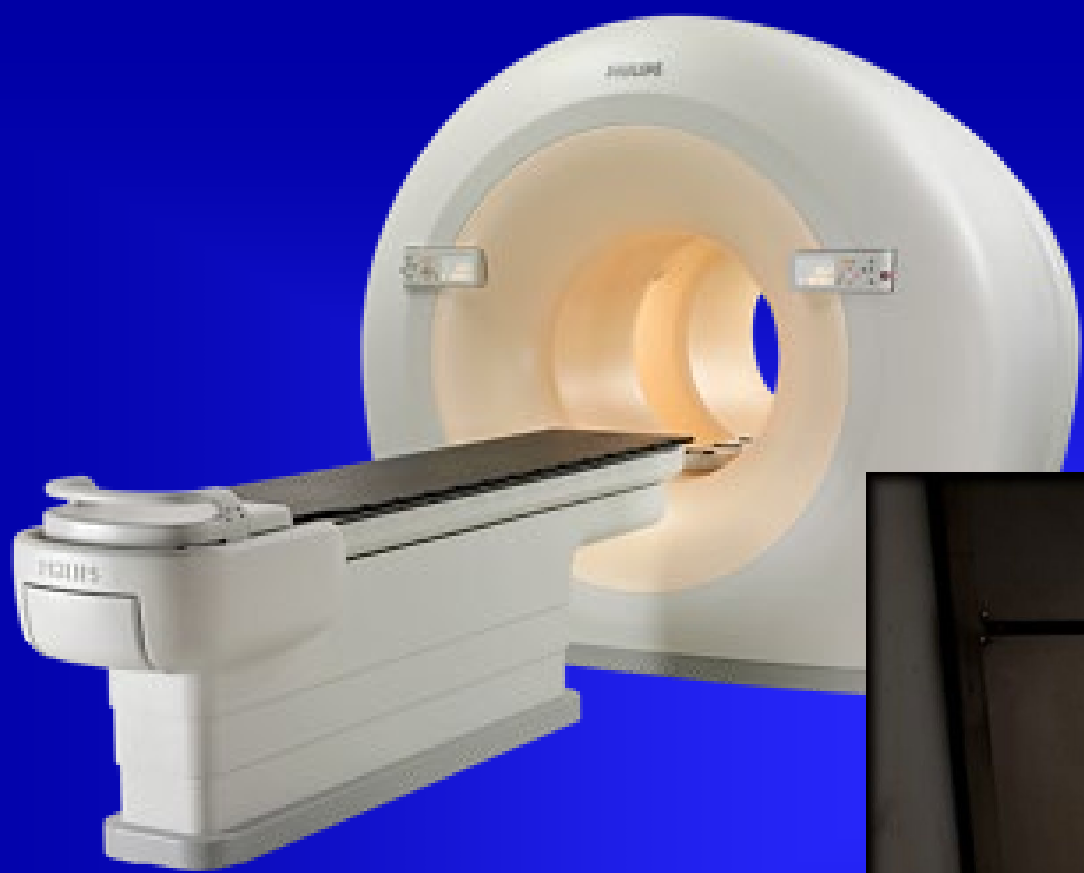
ČEKÁ NA PACIENTA



Diagnostika – 1-0-1 přístup

- Klinické vyšetření – suspekce
- eFAST protokol
- RTG hrudníku + pánve





Rutininní CT vyšetření v urgentní péči

Victims

Of

Modern

Imaging

Technologies





Effect of whole-body CT during trauma resuscitation on survival: a retrospective, multicentre study

*Stefan Huber-Wagner, Rolf Lefering, Lars-Mikael Qvick, Markus Körner, Michael V Kay, Klaus-Jürgen Pfeifer, Maximilian Reiser, Wolf Mutschler, Karl-Georg Kanz, on behalf of the Working Group on Polytrauma of the German Trauma Society**

Lancet 2009; 373: 1455-61

Interpretation Integration of whole-body CT into early trauma care significantly increased the probability of survival in patients with polytrauma. Whole-body CT is recommended as a standard diagnostic method during the early resuscitation phase for patients with polytrauma.

Immediate total-body CT scanning versus conventional imaging and selective CT scanning in patients with severe trauma (REACT-2): a randomised controlled trial

Joanne C Sierink, Kaij Treskes, Michael J R Edwards, Benn J A Beuker, Dennis den Hartog, Joachim Hohmann, Marcel G W Dijkgraaf, Jan S K Luitse, Ludo F M Beenen, Markus W Hollmann, J Carel Goslings, for the REACT-2 study group*

Lancet 2016; 388: 673-83

Interpretation Diagnosing patients with an immediate total-body CT scan does not reduce in-hospital mortality compared with the standard radiological work-up. Because of the increased radiation dose, future research should focus on the selection of patients who will benefit from immediate total-body CT.

CT vyšetření

- Vynikající detekce závažných traumat
- Téměř 100 % senzitivita a specificita

CT vyšetření

- Omezený přístup k pacientovy
- Alergie na KL, extubace...
- ČAS k vyhodnocení vyšetření – téměř 2 800 snímků!
- Komunikace, suspekce

- Rychlá detekce PNO a zlomeniny pánve
- Nedoporučeno k indikaci provádění procedur
- Nezrychluje management

Injury, Int. J. Care Injured 51 (2020) 15–19

Contents lists available at ScienceDirect

 **Injury**

journal homepage: www.elsevier.com/locate/injury

Early detection of severe injuries after major trauma by immediate total-body CT scouts 

K. Treskes^{a,*}, M.J.A.M. Russchen^a, L.F.M. Beenen^b, V.M. de Jong^a, S. Kolkman^b, I.G.J.M. de Bruin^c, M.G.W. Dijkgraaf^{cd}, E.M.M. Van Lieshout^e, T.P. Saltzherr^f, J.C. Goslings^{a,g}



Refining the criteria for immediate total-body CT after severe trauma

Kaij Treskes¹ · Teun P. Saltzherr² · Michael J. R. Edwards³ · Benn J. A. Beuker⁴ · Esther M. M. Van Lieshout⁵ · Joachim Hohmann⁶ · Jan S. K. Luitse¹ · Ludo F. M. Beenen⁷ · Markus W. Hollmann⁸ · Marcel G. W. Dijkgraaf⁹ · J. Carel Goslings^{1,10} · on behalf of the REACT-2 study group

Contra indications*

Trauma patients with one of the following characteristics:

- Known age < 18 years
- Known pregnancy
- Referred from another hospital
- Clearly low-energy trauma with blunt injury mechanism
- Any patient with a stab wound in one body region
- Any patient who is judged to be too unstable to undergo a CT scan and requires (cardiopulmonary) resuscitation or immediate operation because death is imminent

Table 6 Revised criteria for immediate total-body CT in trauma patients

Trauma patients with one of the following parameters at hospital arrival:

- Systolic blood pressure < 100 mmHg
- Estimated exterior blood loss \geq 500 ml
- Glasgow Coma Score \leq 13 or abnormal pupillary reaction

AND/OR

Patients with a clinical suspicion of one of the following diagnoses:

- Fractures from at least two long bones
- Flail chest, open chest, or multiple rib fractures
- Severe abdominal injury
- Pelvic fracture
- Unstable vertebral fractures/spinal cord compression

AND/OR

Patients with one of the following injury mechanisms:

- Fall from a height (> 4 m/> 13 ft)
- Wedged or trapped chest/abdomen

REVIEW

Open Access



Structured approach with primary and secondary survey for major trauma care: an overview of reviews

Silvia Gianola^{1†}, Silvia Bargerì^{1†}, Annalisa Biffi^{2,3}, Stefania Cimbanassi⁴, Daniela D'Angelo⁵, Daniela Coclite⁵, Gabriella Facchinetti⁵, Alice Josephine Fauci⁵, Carla Ferrara⁵, Marco Di Nitto⁵, Antonello Napoletano⁵, Ornella Punzo⁵, Katya Ranzato⁶, Alina Tratsevich^{2,3}, Primiano Iannone⁷, Greta Castellini^{1†}, Osvaldo Chiara^{4†} and Italian National Institute of Health guideline working group on Major Trauma

The results of the present overview show that the application of a structured approach using a checklist including non-routine WBCT after initial assessment in selected patients during trauma resuscitation can offer positive patient- and process-related outcomes. Clinicians should

“Our patients did not choose us.
We chose them.”

“We have accepted this responsibility . . . we must
give to our patients the very best care that we
can.”



“We must be ready to treat our
patients by learning from our
experiences and the science
provided by pre/hospital research.”

Norman E. McSwain, MD
Medical Director, PHTLS

Courtesy Norman McSwain, MD, FACS,
NREMT-P

Wrap up

- xABCDE approach to the patient
- Selective indication for whole body CT in trauma
- Unstable patient is for OR, not for CT