



USZ Universitäts
Spital Zürich

Standards in Polytrauma Treatment: A Europe-wide survey

Demographics

1. What is your gender?

- ☐ female
- ☐ male
- ☐ unspecified

2. What is your current level of education/training?

- ☐ Intern
- ☐ Resident
- ☐ Attending
- ☐ Senior Attending
- ☐ Head of Department

3. How many years of work experience do you have?

0 40

4. How many polytraumatized patients do you treat per month?

0 100

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Diagnostics

6. What kind of poly trauma definition is used in your clinic?

1 Answer

☐ Polytrauma "Berlin Definition"

(2 injuries greater or equal AIS 3 and one or more additional diagnosis (pathological condition): hypotension (syst. BP $\leq$ 90 mmHg,) unconsciousness (GCS $\leq$ 8), acidosis (base deficit $\leq$ -6.0), coagulopathy (PTT $\geq$ 40 sec. or INR $\geq$ 1.4), age ($\geq$ 70 years).)

☐ ISS $\geq$ 16

☐ ISS $\geq$ 25

☐ At least 2 severe injuries of the head, chest or abdomen or one of them in association with an extremity injury

☐ Another regional/international definition? (please explain):

7. What are the **3** most relevant indicators for an unstable patient / patient in shock?

3 Answers

☐ Admission blood pressure < 90 mmHg (sys) / tachycardia / vasopressors

☐ Pathological Shock Index

☐ Coagulopathy (platelets < 90.000)

☐ Coagulopathy (by ROTEM)

☐ Lactate > 2.5 mmol/l

☐ Lactate > 4.0 mmol/l

☐ pH/BE shift

8. Which polytrauma treatment guidelines are used in your clinic?

1 Answer

☐ S-3-Guideline (by DGU®)

☐ Other international guideline

☐ Local hospital guideline

☐ No guideline

☐ Regional guideline

9. What is the role of thromboelastography (ROTEM® or TEG®) in decision-making for Damage Control Surgery in your clinical practice?

1 Answer

- ☐ Very important
- ☐ Not relevant
- ☐ We do not use thromboelastography / we use other parameters

Indication

10. How would you define „major fractures“ in polytrauma?

1 Answer

- ☐ According to body region: Femur, Pelvis, Spine, etc.
- ☐ Presence of a complex fracture situation (e.g. articular fractures AO-Type C)
- ☐ Presence of concomitant severe soft tissue injuries
- ☐ Degree of contamination of bone and soft tissues
- ☐ Presence of concomitant injuries (e.g. vascular or neurological injuries)
- ☐ Combination of the above answers

11. What is the most important indication for «MusculoSkeletal Temporary (MuST) Surgery *»?

1 Answer

*(MusculoSkeletal Temporary (MuST) Surgery = temporary stabilization of musculoskeletal injuries in hemodynamically and physiologically stable patients)

- ☐ Presence of complex articular fractures
- ☐ Severe soft tissue injuries
- ☐ Severe wound contamination
- ☐ Surgeon`s experience
- ☐ Infrastructure of the hospital and / or the trauma system

Intervention

12. When do you use REBOA* in your setting ?

Several answers possible

*(resuscitative endovascular balloon occlusion of the aorta)

- ☐ To control all non-compressible major bleeding
- ☐ To control bleeding in blunt hemodynamically unstable trauma patients with pelvic fractures
- ☐ In truncal injuries proximal to pelvis
- ☐ We do not use REBOA

13. What is the most commonly used „damage control“ intervention in lower extremity injuries?

1 Answer

- ☐ External fixation
- ☐ Traction
- ☐ Both, external fixation and traction
- ☐ Cast / Splinting

14. What is the standard sequence of femoral fracture fixation in your clinic in „unstable“ patients?

1 Answer

- ☐ 1st. External Fixation, 2nd unreamed intramedullary nailing
- ☐ 1st. External Fixation, 2nd reamed intramedullary nailing
- ☐ 1st. External Fixation, 2nd ORIF by plating
- ☐ Definitive osteosynthesis with plating
- ☐ Definitive osteosynthesis with nailing

15. Which parameters (max. 3) are most relevant for intra-operative decision-making in major surgery?

3 answers possible

- ☐ Coagulopathy (clinical signs / ROTEM)
- ☐ Drop in body temperature
- ☐ Urinary output
- ☐ Transfusion / blood loss
- ☐ Lactate levels / BE
- ☐ Duration of surgery > 2 h
- ☐ Hemodynamic stability / need for vasopressors
- ☐ Duration of surgery > 6 h

Secondary surgery

16. What are the most relevant (max. 3) parameters used to clear the patient for secondary surgery after a polytrauma?

3 answers possible

- ☐ Absence of SIRS criteria
- ☐ No relevant administration of vasopressors
- ☐ Normal / negative input/output ratio
- ☐ Absence of coagulopathy
- ☐ Normal pulmonary function

17. When do you perform secondary surgery after polytrauma?

1 Answer

- ☐ As soon as the parameters have normalized
- ☐ If ICU clears by parameters
- ☐ Always within 72 hours
- ☐ Always wait for the window of opportunity (5 days)

18. How do you decide on the extend of the secondary surgery?

1 Answer

- ☐ Always limit to 2-3 hrs.
- ☐ If parameters are normal, unlimited duration
- ☐ Assess intraoperatively, if surgery > 2 hours
- ☐ No limit after window of opportunity (wait 5 days)

19. How do you group the sequence of secondary surgery in stable multiple injured patients?

1 Answer

- ☐ According to body region (trunk first, long bones second, etc.)
- ☐ According to the complexity of fractures
- ☐ Risk of bleeding and duration of operation
- ☐ Experience of the surgeon or status of infrastructure