



Important procedures may include placement of arterial lines and central venous catheters (CVCs). Knowledge of indication, performance and localization of invasive catheterisation of trauma care in Germany is scarce” Struck et al (2017).

Abstract:

BACKGROUND: The continuous monitoring of vital parameters and subsequent therapy belong to the core duties of anaesthetists during acute trauma resuscitation in the trauma room. Important procedures may include placement of arterial lines and central venous catheters (CVCs). Knowledge of indication, performance and localization of invasive catheterisation of trauma care in Germany is scarce.

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METHODS: After approval of the German Society of Anaesthesiology and Intensive Care Medicine we conducted an online survey about arterial and central venous catheterisation of severely injured patients with consideration of common practice used by anaesthetists in German trauma rooms. Data are presented in a descriptive manner.

RESULTS: Of 843 hospitals invited for the survey, 72 (8.5%) had complete and valid data and were thus included in the analysis. Of these, 47% were supra-regional (level 1) trauma centres, 38% regional trauma centres and 15% local trauma centres. The annual mean injury severity score (ISS) of admitted patients to these hospitals was 21 ± 10 . In the trauma room, the responding hospitals place CVCs (49%) and arterial lines (59%) only in haemodynamically unstable patients, whereas 24% (CVC) and 39% (arterial line) do when pathological laboratory tests were confirmed. Standard operating procedures (SOPs) merely exist for placement of either arterial lines (25%) or CVCs (22%) in multiple trauma resuscitation. The decision to perform CVC or arterial line placement is usually (79%) at the discretion of the attending anaesthetist. The preferred anatomical access site for CVCs is the right internal jugular vein (46%) and for arterial lines the radial artery (without side preference) (57%),

respectively. Of the responding hospitals, 49% prefer landmark-guided CVC-puncture (91% of arterial lines) instead of 43% using sonographic guidance (9% of arterial lines). Intravascular electrocardiography monitoring for CVC tip detection is used by 36%.

CONCLUSION: In Germany, medical indication and schedule of invasive vascular catheterisation of severely injured patients in the trauma room is rarely regulated by SOPs and often performed at the discretion of the attending trauma team. Sonographic assistance during vascular puncture and electrocardiography for CVC tip detection is not as common as in non-emergency anaesthesia. Further studies are required to explore the real necessity and safety of invasive vascular catheterisation in multiple trauma patients in order to improve trauma care.

Reference:

Struck, M.F., Hilbert-Carius, P., Hossfeld, B., Hinkelbein, J., Bernhard, M. and Wurmb, T. (2017) Anaesthesia procedures and invasive vascular access in severely injured patients at trauma room admission in Germany : An online survey. *Der Anaesthesist*. January 11th. . .

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