

The aim of the present study was to describe the use and complications of fAC-CVC in the trauma bay in two centers where they are routinely used” Hamada et al (2018).

Abstract:

BACKGROUND: Arterial and central venous femoral catheters (fAC-CVC) use during the initial management of severe trauma patients is not a standard technique in most trauma centers. Arguments in favor of their use are: continuous monitoring of blood pressure, safe drug administration, easy blood sampling and potentially large bore venous access. The lack of evidence makes the practice heterogeneous. The aim of the present study was to describe the use and complications of fAC-CVC in the trauma bay in two centers where they are routinely used.

METHODS: This was a retrospective analysis of routine fAC-CVC use from two French trauma centers. All patients admitted directly to the trauma resuscitation room were included. Demographic, clinical and biological data were collected from the scene to discharge to describe the use of catheters during initial trauma management including infectious, mechanical and thrombotic complications.

RESULTS: 243 pairs of femoral catheters were inserted among 692 patients admitted in both trauma centers. Femoral AC-CVC use was more frequent in critically ill patients with higher ISS 26 [17; 41] vs 13 [8; 24], $p < 0.001$ (median), severe traumatic brain injury (AIS head 1[0-4] vs 0[0-3], $p < 0.001$), lower systolic blood pressure, 92 (37) vs 113 (28) mmHg, $p < 0.001$ mean (standard deviation), lower haemoglobin on arrival, 10.9 (3) vs 13.3 (2.1) g/dL ($p < 0.001$), and higher blood lactate concentration, 4.0 (3.9) vs 2.1 (1.8) mmol/L ($p < 0.001$). In patients with fAC-CVC use time in the trauma room was longer, 46 [40;60] vs 30 [20;40] minutes ($p < 0.05$). In total 52 colonizations and 3 bloodstream infections were noted in 1000 catheter days. An incidence of 12% of mechanical complications and of 42% deep venous thromboses were observed. Of the latter none was associated with confirmed pulmonary embolism.

CONCLUSION: Femoral AC-CVC appeared to be deployed more often in critically ill patients, presenting with shock and/or traumatic brain injury in particular. The observed rate of complications in this sample seems to be low compared to reported rates.

Reference:

Hamada, S.R., Fromentin M., Ronot, M., Gauss, T., Harrois, A., Duranteau, J. and Paugam-Burtz, C. (2018) Femoral arterial and central venous catheters in the trauma resuscitation room. *Injury*. March 23rd. .

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