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New acronyms for identifying CBRN attacks in the prehospital setting – Part I

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Vehicle Ramming Attacks - Specialised Training and Medical Protocols

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BY VINCENZO VANNI

TOURNIQUET (TQ): SHOULD PHYSICIANS RECEIVE FORMAL TRAINING?

Introduction

For several years, tactical medicine courses have been delivered to military personnel and law enforcement officers, with tourniquets (TQs) as a core component of the curriculum. Beyond being an essential technical skill, tourniquet application is widely recognised as a life-saving manoeuvre in cases of massive haemorrhage.

During this teaching activity, a seemingly simple yet non-trivial question emerged: “Does a newly licensed physician require specific training to correctly apply a tourniquet, or is it sufficient to rely solely on the manufacturer’s instructions to ensure rapid and effective use?”

To address this question, a small experimental test was designed to provide an objective answer.

Methods

Twelve physicians who had recently completed registration with the Medical Council, and were therefore fully licensed to practice medicine, were enrolled in the study. None of the participants had attended specific post-graduate or extracurricular courses related to the management of massive haemorrhage beyond their standard university medical training. This prerequisite was verified before inclusion.

Participants were randomly assigned via simple randomisation (lottery) to two groups of six physicians each.

Group A (Self-directed learning)

Each participant received a commercial tourniquet (Combat Application Tourniquet, CAT) along with the manufacturer’s instruction leaflet describing the steps required for correct application. Participants were placed individually in a room and given 15 minutes to familiarise themselves with the device and practice independently before testing.

Group B (Instructor-led training)

Participants attended a face-to-face training session conducted by an experienced instructor. The same tourniquet model (CAT) was used, and participants were likewise given 15 minutes for instruction and hands-on practice.

Test Procedure

Following the training phase, all participants were escorted to a testing room where the evaluation protocol was explained in detail.

Primary outcome

The primary endpoint was the time required to correctly apply the tourniquet. A tourniquet application was considered successful and valid only if the radial pulse was completely absent at the end of the procedure, indicating effective arterial occlusion.

Results

The results demonstrated a marked difference between the two groups:

Group A (self-directed learning) required, on average, nearly 1 minute and 54 seconds to achieve a valid tourniquet application.

Group B (instructor-led training) achieved correct application in approximately 29 seconds.

Only applications meeting the predefined criterion of radial pulse absence were considered valid.

Discussion

In cases of massive haemorrhage, time is not measured in minutes but in seconds. Loss of consciousness and death due to exsanguination can occur rapidly, making prompt and effective haemorrhage control essential. The findings of this test clearly suggest that relying solely on written instructions is insufficient to guarantee rapid and effective tourniquet application, even among licensed physicians.

These results highlight the critical importance of structured, hands-on training for all healthcare professionals, from physicians to other providers. Moreover, training should be delivered by instructors with documented and substantial field experience, rather than through short, commercially driven instructor courses that may prioritise certification over competence.

This issue is not limited to tactical medicine. Similar concerns arise in other areas such as Basic Life Support (BLS), Advanced Cardiovascular Life Support (ACLS), and related emergency courses. The increasing adoption of fully online courses—lacking a practical component yet still offering official certification—raises serious concerns about training quality and patient safety.

Conclusions

Life-saving procedures such as tourniquet application cannot be effectively learned through theoretical instruction alone. Even healthcare professionals with a strong medical background must approach these skills as learners and engage in professional, practice-oriented training programs rather than purely commercial certification pathways.

It is therefore advisable for professional educators in the medical field to emphasise the necessity of high-quality, hands-on training for life-saving manoeuvres and to promote educational models that prioritise competence, experience, and patient outcomes over formal credentials alone.

Vincenzo Vanni holds a diploma and a degree in paramedical sciences, as well as an Advanced Diploma in Remote Medical Practitioner. He serves as a trainer in tactical medicine for police forces and military personnel. He has been the Director of Operations for AREMT in Europe for 15 years.