



Elastic tourniquets (ETs) and blood pressure cuffs (BPCs) are frequently used for venodilation. Although BPCs lead to increased venodilation and decreased compressibility, it is unclear whether this translates into a meaningful patient-centered outcome. This study aimed to determine whether one method is superior for success on the first attempt” Tran et al (2019).

Abstract:

OBJECTIVES: Peripheral intravenous (IV) cannulation is the most common procedure performed in the emergency department (ED). Elastic tourniquets (ETs) and blood pressure cuffs (BPCs) are frequently used for venodilation. Although BPCs lead to increased venodilation and decreased compressibility, it is unclear whether this translates into a meaningful patient-centered outcome. This study aimed to determine whether one method is superior for success on the first attempt.

METHODS: This was a prospective, single-blinded, randomized controlled trial in the ED of a tertiary care center. A convenience sample of adult patients was randomly assigned to an ET or BPC with a cover concealing the type of tourniquet. The primary outcome was success rate on the first attempt. Secondary outcomes were number of attempts, number of providers, and rate of rescue techniques.

RESULTS: Of the 121 patients enrolled, 119 qualified for analysis. In the ET group, 42 of 59 patients (71%) had successful IV cannulation on first attempt compared with 43 of 60 (72%) in the BPC group ($P = .95$). The number of attempts ($P = .87$), number of nurses ($P = .67$), and use of rescue techniques ($P = .32$) did not differ significantly. A history of difficult IV access and site other than the antecubital vein were associated with decreased success.

CONCLUSIONS: ETs and BPCs performed similarly in providing venodilation for successful peripheral IV cannulation. History of difficult IV access and IV site are important factors in determining the likelihood of success.

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Reference:

Tran, T., Lund, S.B., Nichols, M.D. and Kummer, T. (2019) Effect of two tourniquet techniques on peripheral intravenous cannulation success: A randomized controlled trial. *The American Journal of Emergency Medicine*. March 23rd. . doi: 10.1016/j.ajem.2019.03.034.

