

Mil Med. 2013;178(11):1196-201. doi: 10.7205/MILMED-D-13-00223.

The evaluation of an abdominal aortic tourniquet for the control of pelvic and lower limb hemorrhage.

Taylor DM, Coleman M, Parker PJ.

ABSTRACT: Despite improved body armor, hemorrhage remains the leading cause of preventable death on the battlefield. Trauma to the junctional areas such as pelvis, groin, and axilla can be life threatening and difficult to manage. The Abdominal Aortic Tourniquet (AAT) is a prehospital device capable of preventing pelvic and proximal lower limb hemorrhage by means of external aortic compression. The aim of the study was to evaluate the efficacy of the AAT. Serving soldiers under 25 years old were recruited. Basic demographic data, height, weight, blood pressure, and abdominal girth were recorded. Doppler ultrasound was used to identify blood flow in the common femoral artery (CFA). The AAT was applied while the CFA flow was continuously monitored. The balloon was inflated until flow in the CFA ceased or the maximum pressure of the device was reached. A total of 16 soldiers were recruited. All participants tolerated the device. No complications were reported. Blood flow in the CFA was eliminated in 15 out of 16 participants. The one unsuccessful subject was above average height, weight, body mass index, and abdominal girth. This study shows the AAT to be effective in the control of blood flow in the pelvis and proximal lower limb and potentially lifesaving.