

***Dott.ssa Maria Valenti (1)***  
***Dott. Tiziano Pio Valentino (2)***

## **INTRODUCTION**

Ultrasound in major trauma is a well-established method for emergency diagnosis of pneumothorax, endo-abdominal, pleural and pericardial effusions. The learning curve is relatively long and depends on the individual propension in the acquisition of specific skills as well as the number of exams performed. In the literature it is evident the correlation between diagnostic E-FAST and speed and simplicity of execution for well-skilled personnel; the optimal time needed to complete an E-FAST on 6 windows as well as the learning curve by inexperienced medical personnel, vice versa, are not well represented. The purpose of this study is to identify what may be the time required to complete the learning curve for a diagnostic E-FAST performed by doctors without ultrasound experience, with control by an expert sonographer with at least 5 years of experience; in addition to the acquisition of diagnostic skills which is the shortest time necessary for the execution of the ultrasound examination on 6 windows.

## **MATERIAL AND METHODS**

The study was The study was conducted in the period from **October 2024 to March 2025**, in the Emergency Department of Corigliano-Rossano Hospital, and Emergency Department of Conegliano Hospital, involving 224 patients both with a diagnosis of acceptance of Major Trauma – 124 patients, with another non-traumatic diagnosis – 100 patients, without distinction of sex or race, over 6 years of age, submitted to the same E-FAST, following the TrUST (Trauma Ultrasonography Stress Teaching) teaching method, supporting by two expert ultrasound doctors that taught to 10 non-skilled doctors (5 in Calabria and 5 in Veneto) measuring the minutes needed for each doctor to perform the examination on 6 ultrasound windows starting from the end of the period of instruction at E-FAST lasting 3 days for each: right and left pulmonary apex, epigastrium, right and left lateral hypochondrium, hypogastrium. The thickness of the presumed spills detected in millimeters was also measured with iconographic test as well as the pleural sliding with possible lung-point by clip acquisition. The learning curve for the execution of a diagnostic E-FAST was measured up to achievement of at least 20 tests with 20/20 confirmation by an experienced doctor (both for patients traumatized and control patients) and confirmation TAC (for traumatized patients according to times and ATLS procedures).

## **RESULTS**

The learning period with TruST teaching technique lasts 1 month in mean to perform E-FAST in a maximum time of 3 minutes in means.

## **DISCUSSION**

The TrUST teaching method was performed by using the convex probe in 6 standardized windows, by means stressing the young doctor to execute the examination in the less time as possible, stressing them to do this by the skilled doctor: it was fundamental the constant presence of the skilled doctor during the whole diagnostic phase, from the acceptance of the patient to the admission, because of the need of checking for the presence of US signs (gatherings, free fluid, sliding) about trauma diagnosis. The young doctors had the whole acceptance of this teaching method.

## **CONCLUSIONS**

The TruST approach can be evaluated as a standard teaching method for E-FAST in ED because of its simple and no time consuming approach, and overall for its diagnostic value for the right treatment of major trauma patients according with ATLS.

### **Affiliazioni**

- 1 Chief, Internal Medicine Specialist, Emergency Medicine Corigliano-Rossano Hospital, Cosenza, Calabria, Italy. Tel. 340 9895164  
2 Medical Doctor, General Surgeon Specialist, Emergency Medicine Conegliano Hospital, Treviso, Veneto, Italy. Tel. 338 7748511

### **Contatti**

Dott.ssa Maria Valenti – mariellavalenti@hotmail.it – 340 9895164

RESEARCH ABSTRACT - TEACHING