hospitals with heliport outside the hospital (5 ±2.18 and 6 ±2.94 vs. 9 ±3.94 and 12 ±3.49, p<0.001).

Conclusion Hospital based heliports ensure shorter time delay from landing to pPCI in patients with STEMI. We strongly recommend that heliports are located close to the treating facility. Transfer from landing site to hospital by ground ambulance seems unfeasible in time critical patients.

Conflict of interest None declared.

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NEW METHODS FOR DIAGNOSIS OF THORACIC TRAUMA IN PREHOSPITAL CARE

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Aim Trauma to the thorax is common and can be life-threatening. Ultrasound is a promising technology; however, its accuracy is operator dependent. Methods not requiring operator image interpretation would be beneficial. The aim of this study is to evaluate electrical bioimpedance (EBI) and microwave technology (MWT). Both technologies are non-operator dependent, non-invasive, harmless, cost efficient, rapid and portable.

Methods Two complementary lines of research are pursued. A clinical study aiming to differentiate EBI measurements of thoracic trauma patients (n=20) and healthy controls (n=20), using diagnostic mathematical algorithms, has been completed. Clinical trials are complemented by experiments on realistic porcine models of pneumothorax (PTX) and hemothorax (HTX).1,2,3 These experiments enable analysis of EBI and MWT with well-defined injuries. A pilot study on two pigs with unilateral PTX from small (50 mL) to large (2000 mL) sizes, and large HTX, was performed. Diagnostic performance is evaluated using cross-validation to derive the area under the ROC curve (AUC), and confusion matrices.

Results The clinical study achieved AUC=0.87. The pilot porcine study showed that EBI parameters evolved as expected with increasing PTX/HTX; EBI theory predicts presence of air with increasing PTX/HTX; EBI theory predicts presence of air.

References


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