Dr Semir NOUIRA

Network in South Africa

RESEAU DE RECHERCHE EXPERIENCE DU SERVICE DE MONASTIR

Résumé de la conférence de Dr Nouira au 4ème meeting du GREAT Paris 2011

Rational

Thank you for this opportunity which allows me to talk about our experience in Tunisia.

There remains a profound mismatch between the compelling evidence documenting the health and economic burden of CVD and the lack of concrete steps to increase investment and implement CVD management efforts in developing countries. Our network is an initiative dedicated to improving the management of the most frequent and important acute conditions observed in the ED. So that most of the executive and board members of our network are Emergency specialists (they are clinical experts, medical researchers and health practitioners who support the goal of acute disease control through their work in the field) and the central structure is the ED of Monastir University Hospital.

It builds linkages with ES and regional ED and encourages networking through traditional means of symposia as well as through its website. So we built a strong collaboration with various national organisations like the THF and international organisations like the AHA as we have a BLS center that received the AHA accreditation. Of course we have regular cooperation with various clinical departments like cardiology, internal medicine, hematology department and biochemistry Lab.

Who we are

Initiative to improve management of acute heart disease affecting more than ….

Provide platform for our researchers to reach the attention of policy makers and colleagues from other countries. Through that platform, we highlight our work including research at the national and international levels.

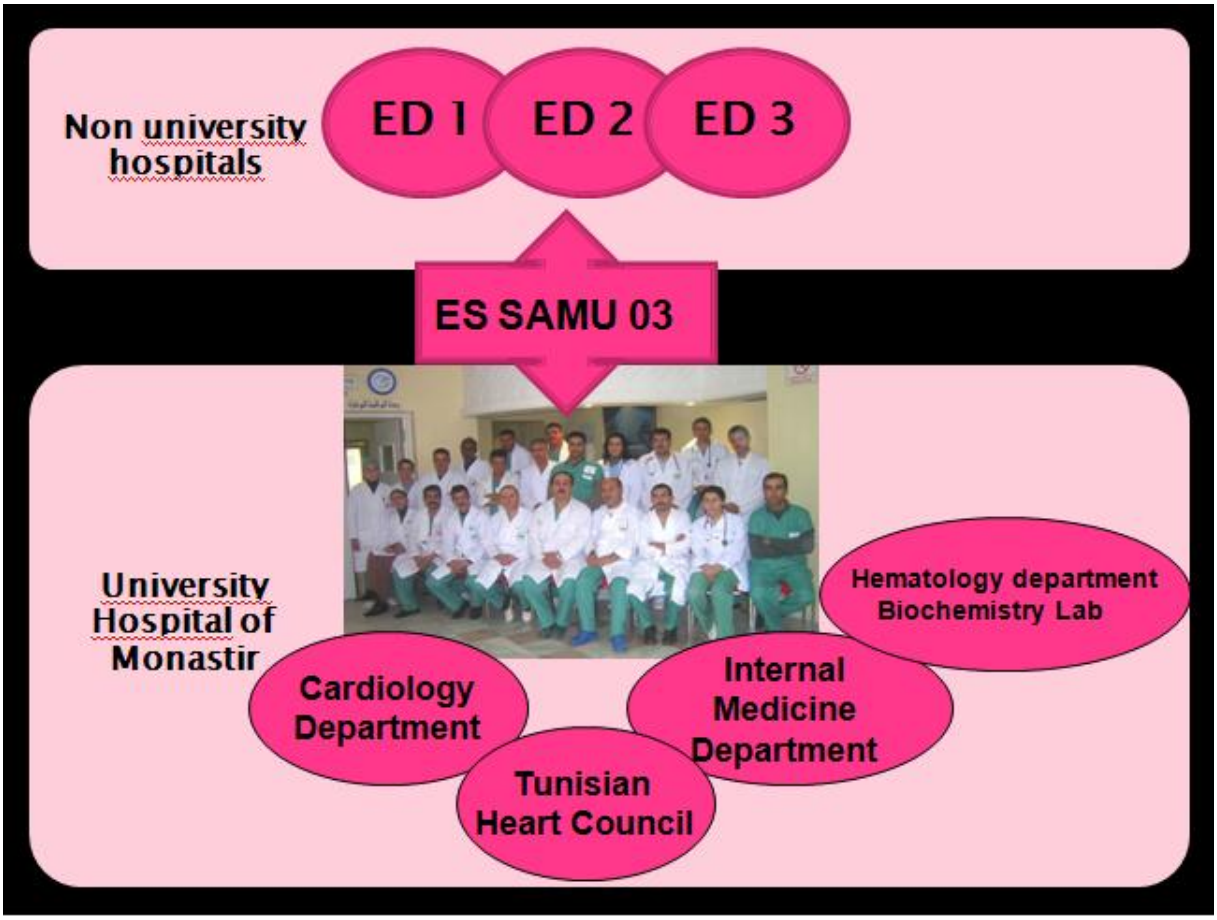
A network of collaborators

They are clinical experts, medical researchers and health practitioners who support the goal of acute heart disease control though their work in the field.

Our history

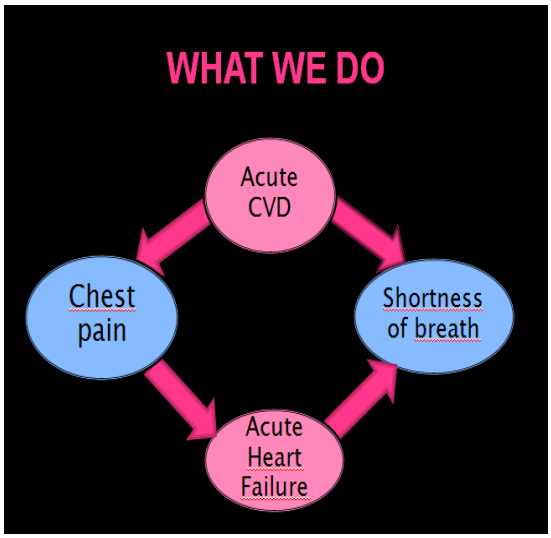
We work within three primary tracks:

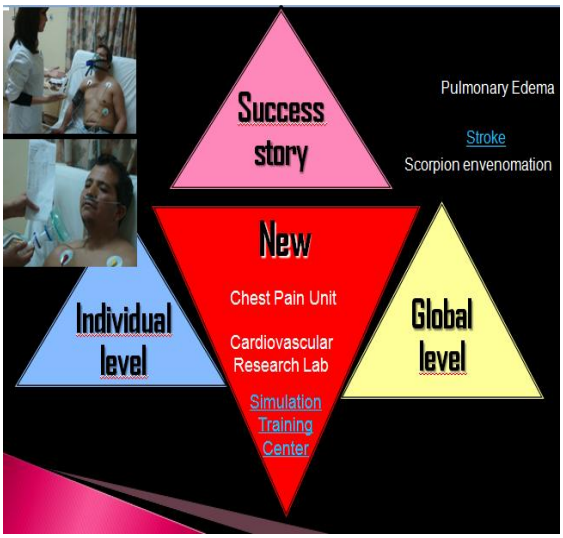
1. **Improve diagnosis ability of the two main great symptoms observed in the ED :shortness of breath and chest pain.**
2. **Improve management of AHF and ACS in the ED**



WHAT WE DO

Our principal mission is to promote research and education of professionals with particular interest to acute cardiovascular disease and the two main symptoms observed in the ED with acute heart failure as a common topic.





Succes story

At the individual level, we succeed every time we treat a patient according to available clinical evidence.

At the global level we improved our research capacity in many topics:

1. In scorpion envenomation :

We developed a strong partnership with our colleagues general practitioners from the south of Tunisia to perform RCT and this is the first one conducted in Tunisia to assess SAV in SE.

This is also the first study where RV function was assessed by fast response thermodilutioncatheter ; this study was conducted in the desert of Tunisia.

This is the most recent clinical study on SE where a clinical score predicting the need for hospitalisation was developed with the aim to be used by local ED physicians

Serotherapy in scorpion envenomation: a randomised controlled trial

Fekri Abroug, Souheil ElAtrous, Semir Nouira, Habib Haguiga, Naceur Touzi, Slah Bouchoucha

Summary

Background Evidence for the benefit of scorpion antivenom, the only specific treatment for scorpion envenomation, is scarce, despite its common use. We did a prospective, randomised, controlled trial to assess the efficacy of routine administration of scorpion antivenom to scorpion-stung patients, irrespective of clinical severity.

Methods We included 825 consecutive patients older than 10 years, who presented to the accident and emergency department of the hospital in Tozeur, Tunisia. We graded severity by absence (grade I) or presence (grade II) of systemic manifestations of scorpion envenomation. Patients were randomly assigned placebo (n=413) or 20 mL bivalent intraveneous scorpion antivenom (n=412). All patients were observed for 4 h. Patients who developed life-threatening symptoms were admitted to the intensive-care unit. At the end of 4 h observation we reassessed grade and discharged grade I patients and admitted grade II patients. We assessed the preventive and curative effects of scorpion antivenom by prevention of worsening grade or by improvement from grade II to grade I.

Findings Distribution of severity grades was similar in the two groups at baseline, as were the cure rates (55% scorpion

after scorpion envenomation.[3] Almost 40 000 stung patients are recorded in Tunisia each year; 1000 of these have systemic manifestations requiring admission to hospital, of whom about 100 patients die.[4] Scorpion envenomation also leads to a high financial burden. In Tunisia, a health programme devised to lower the mortality and morbidity of scorpion envenomation has been implemented in the past 10 years, for which the annual direct and indirect costs are estimated to be US$1 million. Almost 80% of costs are accounted for by the purchase and administration of scorpion antivenom (Tunisian Health Ministry report, 1998).

Opinions differ about the correct treatment of scorpion envenomation. The current therapeutic strategies rely partly on supportive symptomatic treatments (eg, analgesics, antipyretics, antihistamine).[2] Scorpion antivenom is, however, the only specific treatment and is widely used in many countries such as Brazil or Saudi Arabia.[2,5-7] Serotherapy has been a matter of debate and controversy during the past few years.[8-11] The acceptance of scorpion antivenom as an effective treatment in scorpion envenomation is based mainly on its efficacy in experimental studies; its clinical use, however, varies widely and many authorities have raised questions about its actual efficacy and have challenged its clinical benefit.[6,8,10,12] In

Lancet 1999; **354:** 906–09

Intensive Care Med. 1995 Aug;21(8):629-35.

Assessment of left ventricular function in severe scorpion envenomation: combined hemodynamic and echo-Doppler study.

Abroug F, Ayari M, **Nouira** S, Gamra H, Boujdaria R, Elatrous S, Ben Farhat M, Bouchoucha S.

Service de Réanimation Polyvalente, CHU F. Bourguiba, Tunisia.

Abstract

OBJECTIVE: To assess left ventricular function in patients presenting with pulmonary edema following scorpion envenomation.

DESIGN: Cohort study.

SETTING: Medical **intensive care** unit of a teaching hospital.

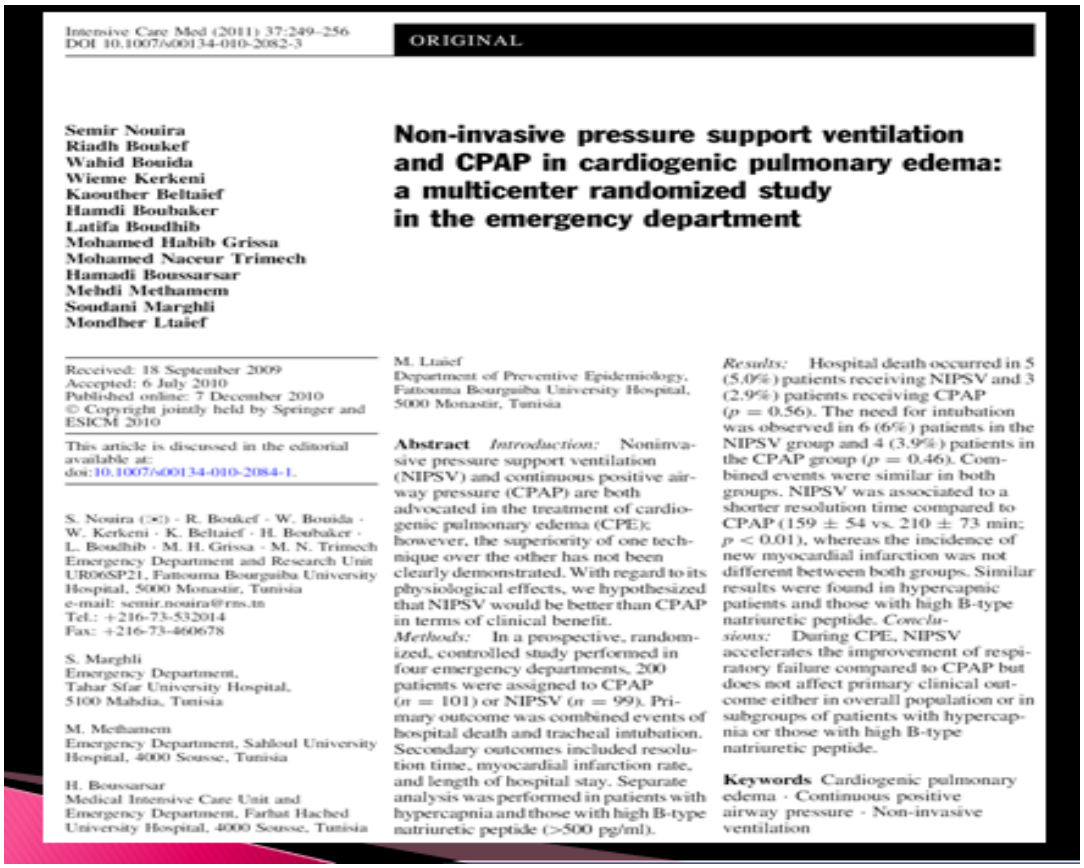
PATIENTS: Nine consecutive adult patients stung by Androctonus australis and presenting with pulmonary edema entered the study. Fourteen normal volunteers comprised the control group.

INTERVENTIONS: Upon admission, all patients had right heart catheterization and, within the first 8 h, a Doppler echocardiographic study. Results of Doppler echocardiographic studies were compared to those of controls.

MEASUREMENTS AND RESULTS: Usual hemodynamic information (heart and vascular pressures, derived data and tissue oxygenation parameters), left ventricular dimensions and indicators of systolic function, and Doppler-derived parameters of left ventricular filling and diastolic function were obtained upon admission. Serial echocardiographic measurements were repeated daily until full clinical recovery (eight patients) or death (one patient). All patients had a hemodynamic profile of acute congestive heart failure (mean PAOP = 24 +/- 2 mmHg; mean SVI = 22 +/- 7 ml/m2; mean CI = 2.5 +/- 0.5 l/min/m2). However, SVR were not increased (mean = 22 +/- 3 U/m2). Left ventricle was hypokinetic in all patients with transient mitral regurgitation present in five patients. Left ventricular systolic function was markedly depressed (FS = 12 +/- 6%; EF = 26 +/- 12%). An associated diastolic dysfunction is suggested by Doppler records of mitral inflow. Left ventricular systolic function evolved toward normalization within 6 +/- 2 days preceded by full clinical recovery.

CONCLUSIONS: These data suggest that pulmonary edema in scorpion envenomation is of hemodynamic origin and is related to a severe and prominent impairment of left ventricular systolic function.

2. Through our network, we conducted this first multicenter randomised controlled trial in cardiogenic pulmonary edema where we succeeded to integrate four clinical participating centers.



Intensive Care Med (2011) 37:249–256
DOI 10.1007/s00134-010-2082-3

ORIGINAL

Semir Nouira
Riadh Boukef
Wahid Bouida
Wieme Kerkeni
Kaouther Beltaief
Hamdi Boubaker
Latifa Boudhib
Mohamed Habib Grissa
Mohamed Naceur Trimech
Hamadi Boussarsar
Mehdi Methamem
Soudani Marghli
Mondher Ltaief

Non-invasive pressure support ventilation and CPAP in cardiogenic pulmonary edema: a multicenter randomized study in the emergency department

Received: 18 September 2009
Accepted: 6 July 2010
Published online: 7 December 2010

This article is discussed in the editorial available at: doi:10.1007/s00134-010-2084-1.

S. Nouira (✉) · R. Boukef · W. Bouida · W. Kerkeni · K. Beltaief · H. Boubaker · L. Boudhib · M. H. Grissa · M. N. Trimech
Emergency Department and Research Unit UR06SP21, Fatouma Bourguiba University Hospital, 5000 Monastir, Tunisia
e-mail: semir.nouira@rns.tn
Tel.: +216-73-532014
Fax: +216-73-460678

S. Marghli
Emergency Department, Tahar Sfar University Hospital, 5100 Mahdia, Tunisia

M. Methamem
Emergency Department, Sahloul University Hospital, 4000 Sousse, Tunisia

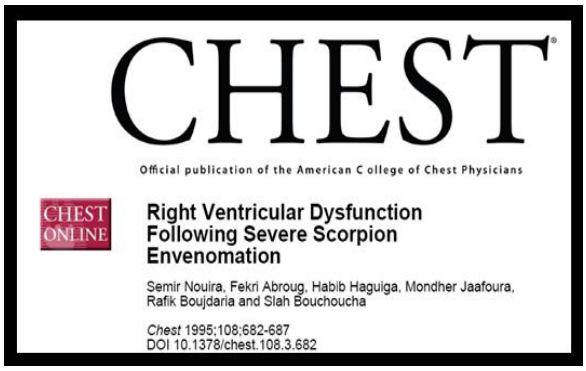
H. Boussarsar
Medical Intensive Care Unit and Emergency Department, Farhat Hached University Hospital, 4000 Sousse, Tunisia

M. Ltaief
Department of Preventive Epidemiology, Fatouma Bourguiba University Hospital, 5000 Monastir, Tunisia

Abstract *Introduction:* Noninvasive pressure support ventilation (NIPSV) and continuous positive airway pressure (CPAP) are both advocated in the treatment of cardiogenic pulmonary edema (CPE); however, the superiority of one technique over the other has not been clearly demonstrated. With regard to its physiological effects, we hypothesized that NIPSV would be better than CPAP in terms of clinical benefit. *Methods:* In a prospective, randomized, controlled study performed in four emergency departments, 200 patients were assigned to CPAP ($n = 101$) or NIPSV ($n = 99$). Primary outcome was combined events of hospital death and tracheal intubation. Secondary outcomes included resolution time, myocardial infarction rate, and length of hospital stay. Separate analysis was performed in patients with hypercapnia and those with high B-type natriuretic peptide (>500 pg/ml). *Results:* Hospital death occurred in 5 (5.0%) patients receiving NIPSV and 3 (2.9%) patients receiving CPAP ($p = 0.56$). The need for intubation was observed in 6 (6%) patients in the NIPSV group and 4 (3.9%) patients in the CPAP group ($p = 0.46$). Combined events were similar in both groups. NIPSV was associated to a shorter resolution time compared to CPAP (159 ± 54 vs. 210 ± 73 min; $p < 0.01$), whereas the incidence of new myocardial infarction was not different between both groups. Similar results were found in hypercapnic patients and those with high B-type natriuretic peptide. *Conclusions:* During CPE, NIPSV accelerates the improvement of respiratory failure compared to CPAP but does not affect primary clinical outcome either in overall population or in subgroups of patients with hypercapnia or those with high B-type natriuretic peptide.

Keywords Cardiogenic pulmonary edema · Continuous positive airway pressure · Non-invasive ventilation

3. Another example illustrating the positive results of our network is this stroke study where different specialists were involved : cardiology, neurology, emergency … and IC.



CHEST

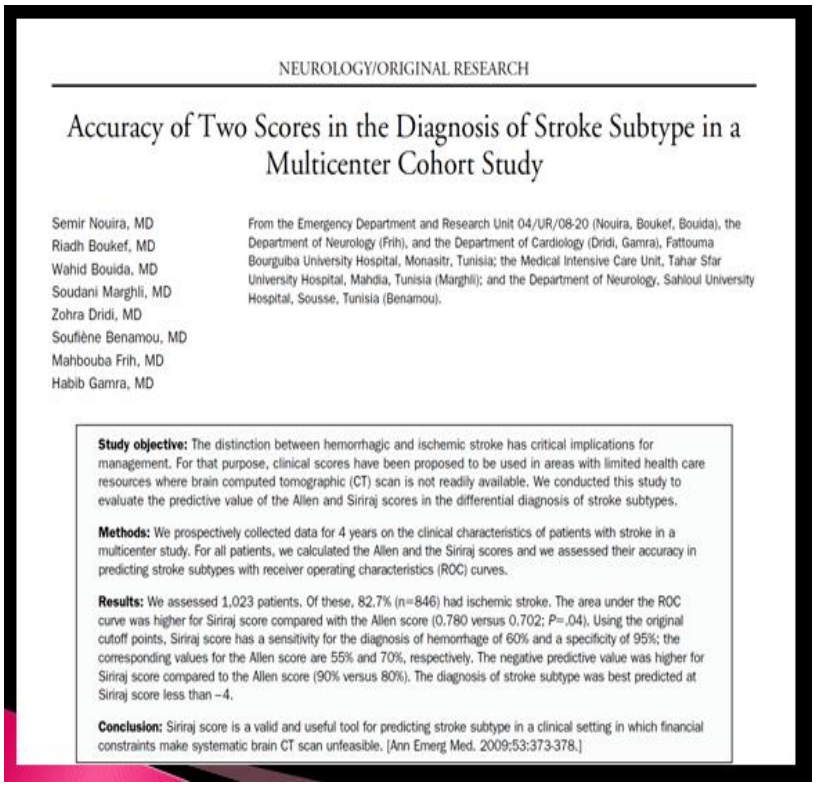
Official publication of the American College of Chest Physicians

CHEST ONLINE

Right Ventricular Dysfunction Following Severe Scorpion Envenomation

Semir Nouira, Fekri Abroug, Habib Haguiga, Mondher Jaafoura, Rafik Boujdaria and Slah Bouchoucha

Chest 1995;108;682-687
DOI 10.1378/chest.108.3.682



NEUROLOGY/ORIGINAL RESEARCH

Accuracy of Two Scores in the Diagnosis of Stroke Subtype in a Multicenter Cohort Study

Semir Nouira, MD
Riadh Boukef, MD
Wahid Bouida, MD
Soudani Marghli, MD
Zohra Dridi, MD
Soufiène Benamou, MD
Mahbouba Frih, MD
Habib Gamra, MD

From the Emergency Department and Research Unit 04/UR/08-20 (Nouira, Boukef, Bouida), the Department of Neurology (Frih), and the Department of Cardiology (Dridi, Gamra), Fattouma Bourguiba University Hospital, Monasitr, Tunisia; the Medical Intensive Care Unit, Tahar Sfar University Hospital, Mahdia, Tunisia (Marghli); and the Department of Neurology, Sahloul University Hospital, Sousse, Tunisia (Benamou).

Study objective: The distinction between hemorrhagic and ischemic stroke has critical implications for management. For that purpose, clinical scores have been proposed to be used in areas with limited health care resources where brain computed tomographic (CT) scan is not readily available. We conducted this study to evaluate the predictive value of the Allen and Siriraj scores in the differential diagnosis of stroke subtypes.

Methods: We prospectively collected data for 4 years on the clinical characteristics of patients with stroke in a multicenter study. For all patients, we calculated the Allen and the Siriraj scores and we assessed their accuracy in predicting stroke subtypes with receiver operating characteristics (ROC) curves.

Results: We assessed 1,023 patients. Of these, 82.7% (n=846) had ischemic stroke. The area under the ROC curve was higher for Siriraj score compared with the Allen score (0.780 versus 0.702; *P*=.04). Using the original cutoff points, Siriraj score has a sensitivity for the diagnosis of hemorrhage of 60% and a specificity of 95%; the corresponding values for the Allen score are 55% and 70%, respectively. The negative predictive value was higher for Siriraj score compared to the Allen score (90% versus 80%). The diagnosis of stroke subtype was best predicted at Siriraj score less than –4.

Conclusion: Siriraj score is a valid and useful tool for predicting stroke subtype in a clinical setting in which financial constraints make systematic brain CT scan unfeasible. [Ann Emerg Med. 2009;53:373-378.]

Our network was reinforced by the creation of :

1 - A chest pain unit 4 years ago allowing a standardized approach to all patients admitted to the ED with chest pain. With the possibility to perform a physical exercise test everyday by our residents

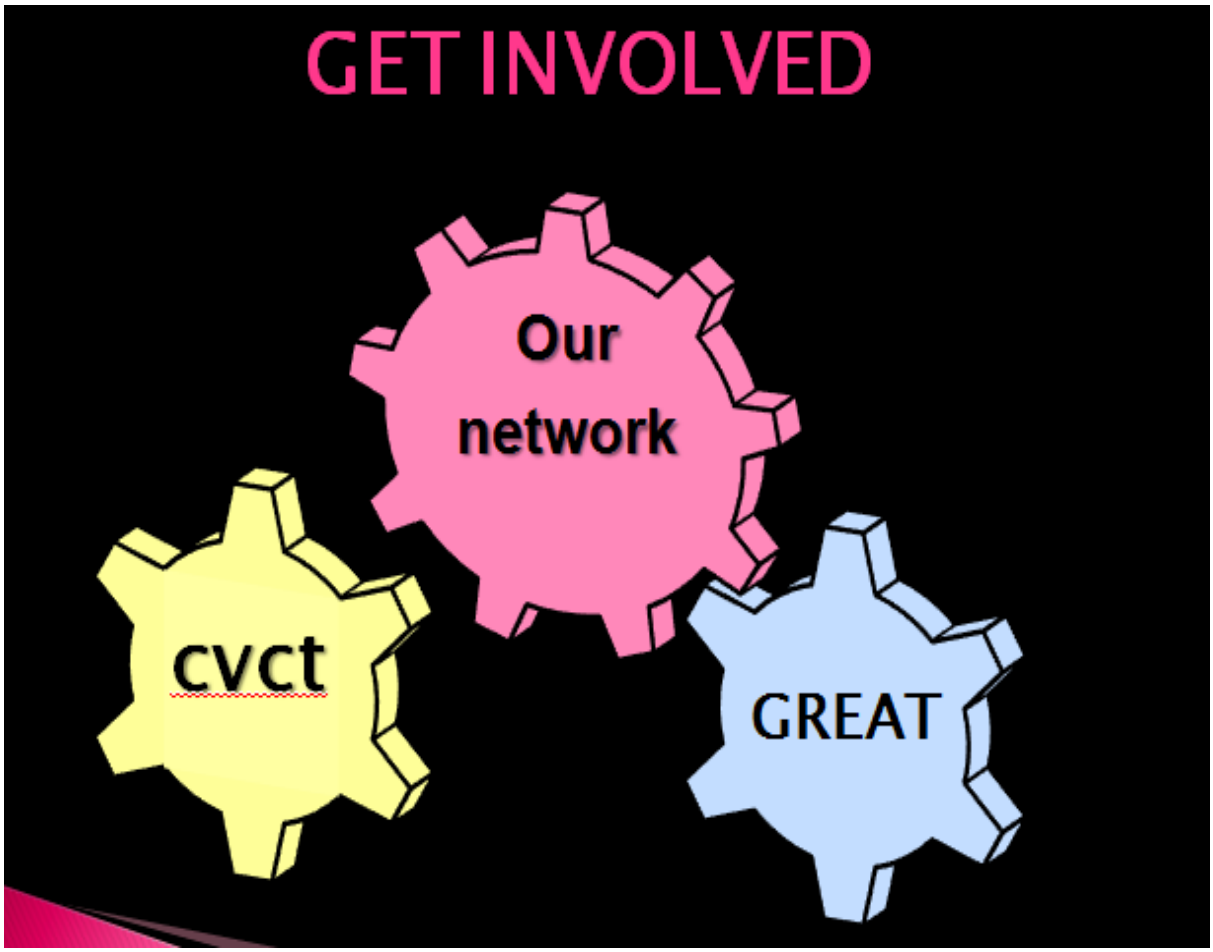
2- A cardiovascular research Lab including echographic and thoracic bio impedance investigation.

3- We recently opened a simulation training center which is a part of our agenda for strengthening and revitalizing our health care system.

Get involved

Through our platform, we would like to highlight our work including research at the national and international levels.

We hope to establish an international network with various centers with the contribution of our colleagues in the GREAT network. We can progress to create a positive impact on the lives of our patients.



American Journal of Emergency Medicine (2007) 25, 414–419

ELSEVIER

The American Journal of Emergency Medicine

www.elsevier.com/locate/ajem

Original Contribution

A clinical score predicting the need for hospitalization in scorpion envenomation

Semir Nouira MD[a,*], Riadh Boukef MD[a], Noureddine Nciri MD[b], Habib Haguiga MD[d], Souheil Elatrous MD[c], Lamia Besbes MD[b], Mondher Letaief MD[e], Fekri Abroug MD[b]

[a]*Emergency Department, Fattouma Bourguiba University Hospital, Monastir 5000, Tunisia*
[b]*Medical Intensive Care Unit, Fattouma Bourguiba University Hospital, Monastir 5000, Tunisia*
[c]*Medical Intensive Care Unit, Tahar Sfar University Hospital, Mahdia 5100, Tunisia*
[d]*Emergency Department and Intensive Care Unit, District Hospital, Tozeur 2200, Tunisia*
[e]*Department of Epidemiology and Statistics, Faculty of Medicine, Monastir 5000, Tunisia*

Received 29 July 2006; accepted 21 August 2006

Abstract

Objective: Predicting complications is a clinical challenge in the assessment of victims of scorpion envenomation (SE). We sought to develop a clinical score to predict need for hospitalization after scorpion sting.

Methods: We prospectively collected data in patients attending the emergency department after SE in derivation (n = 868) and validation groups (n = 435). A score was derived from a multiple regression analyses using clinical variables as dependent variables and hospitalization as independent variable.

Results: Discrimination power of the constructed score was good (area under the receiver operating characteristic curve, 0.85 and 0.83 in derivation and validation group, respectively). Goodness-of-fit tests indicated that the score performed well in the derivation and the validation groups ($P = .88$ and $P = .67$ respectively). The score has a good sensitivity and negative predictive value at cutoff value of 2.

Conclusion: Our clinical score could be used for efficient hospital admission decision in patient's victims of SE.

Standard versus Newer Antibacterial Agents in the Treatment of Severe Acute Exacerbation of Chronic Obstructive Pulmonary Disease: A Randomized Trial of Trimethoprim-Sulfamethoxazole versus Ciprofloxacin

Semir Nouira,[1] Soudani Marghli,[1,3] Lamia Besbes,[2] Riadh Boukef,[1] Monia Daami,[2] Noureddine Nciri,[3] Souheil Elatrous,[3] and Fekri Abroug[2]

[1]Research Unit 04/UR/08-20, [2]Medical Intensive Care Unit, Fattouma Bourguiba University Hospital, Monastir, and [3]Medical Intensive Care Unit, Tahar Sfar University Hospital, Mahdia, Tunisia

(See the editorial commentary by Fantin, on pages 150–152.)

Background. Although the use of antibiotics in the treatment of acute exacerbation of chronic obstructive pulmonary disease (COPD) is largely accepted, controversy remains regarding whether the choice of antibiotic has any impact on outcome. Our aim was to compare the effects of the combination of trimethoprim and sulfamethoxazole and ciprofloxacin in patients treated for severe COPD exacerbation requiring mechanical ventilation.

Methods. In a randomized, double-blind trial, we included 170 patients with an acute exacerbation of COPD requiring mechanical ventilation. Enrolled patients received trimethoprim-sulfamethoxazole ($n = 85$) or ciprofloxacin ($n = 85$) for 10 days. Main outcomes were hospital death and need for an additional course of antibiotics. Secondary outcomes were duration of mechanical ventilation, length of hospital stay, and exacerbation-free interval.

Results. Combined hospital death and additional antibiotic prescription rates were similar in the 2 groups (16.4% vs 15.3% for trimethoprim-sulfamethoxazole group vs ciprofloxacin group; difference, 1.1%; 95% confidence interval [CI] −9.8% to 12.0%; $P = .832$). Hospital death occurred in 7 patients (8.2%) receiving trimethoprim-sulfamethoxazole and 8 patients (9.4%) receiving ciprofloxacin (difference, −1.2%; 95% CI, −9.7 to 7.3; $P = .90$). The need for an additional antibiotic course was observed in 8 patients in the trimethoprim-sulfamethoxazole group and 5 patients in the ciprofloxacin group (difference, 2.3%; 95% CI, −5.4 to 10.0; $P = .549$). The mean exacerbation-free interval (± standard deviation) was similar in both treatment groups (83 ± 25 vs 79 ± 22 for the trimethoprim-sulfamethoxazole group vs ciprofloxacin group; difference, 4 days; 95% CI, −15 to 19 days; $P = .41$). Duration of mechanical ventilation and hospital stay was not significantly different between the 2 groups.

Conclusions. In patients with acute exacerbation of COPD requiring mechanical ventilation, efficacy of trimethoprim-sulfamethoxazole was not inferior to ciprofloxacin.

Trial registration. ClinicalTrials.gov identifier: NCT00791505