經超音波導引施行神經阻斷術於老年人的髖部(hip)骨折應用

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目標

- 主要目標 :
  - 決定此一方式 (經超音波導引股神經阻斷術) 於急診施行的可行性(feasibility)
- 次要目標 :
- 驗證US-guided femoral nerve blocks作爲急診止痛工具的效果

- 麻醉科學雜誌研究指出,不論是初期治療的成效或是治療劑量的需求, "經超音波導引神經阻斷術" 都是優於 "經刺激導引神經阻斷術" 的

方法

- **此唯**一前瞻性觀察研究
- **共計13個髖部(hip)骨折的病人**
- **經超音波導引神經阻斷術用於所有的受試者,評估其可行性、施行此療程的次數以及是否有併發症的發生**

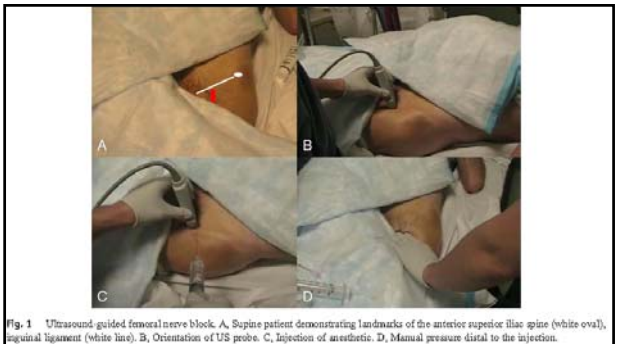

Fig. 1 Ultrasound-guided femoral nerve block. A, Supine patient demonstrating landmarks of the anterior superior iliac spine (white oval), inguinal ligament (white line). B, Orientation of US probe. C, Injection of anesthetic. D, Manual pressure distal to the injection.

經超音波導引施行神經阻斷術 : A:平躺病人且找到髂前上棘[ASIS]部位 B:以超音波探頭找尋 C:注射麻藥 D:用手於注射處遠端給予施壓

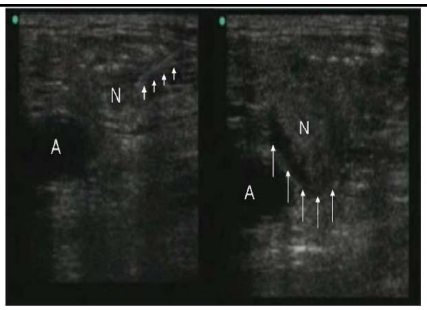

Fig. 2 Ultrasound images of the femoral nerve block. Left, Before anesthetic injection: artery (A), nerve (N), and needle (indicated by short white arrows). Right, After anesthetic injection: artery (A), nerve (N), with anesthetic surrounding the nerve (outlined by long white arrows).

經超音波導引施行神經阻斷術 : 左: 施行前 右: 施行後

- 爲評估其效果,病患在施行此術之前以及之後15分鐘,30分鐘,乃至於一小時都會重新評初期疼痛感;直至術後四小時爲止
- Wilcoxon matched pair signed rank test以及friedman analysis of varience test統計方法來評估疼痛指標

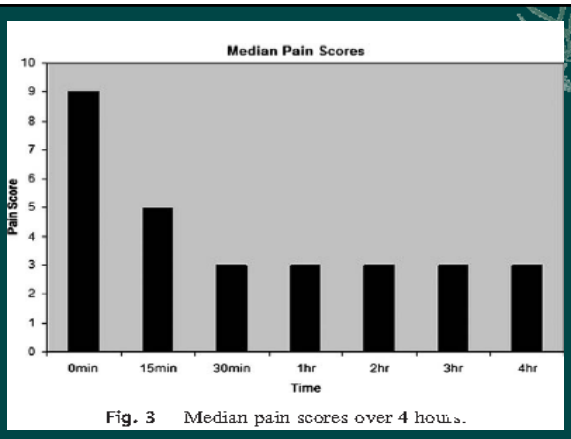

Fig. 3 Median pain scores over 4 hours.

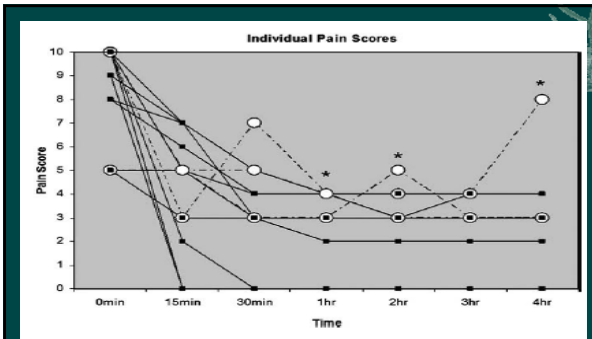

Fig. 4 Individual pain scores over 4 hours. The closed squares represent participants who did not receive rescue analgesia, whereas the open circles represent those who did. Administration of rescue analgesia is indicated by an asterisk over the specific individual and time at which it was given.

- 約有11位受試者平均使用了4 mg 的瑪啡,平均維持約95分鐘
- 13位受試者中,有3位給予額外計量的嗎啡
- 一受試者於一小時左右施打4 mg 的瑪啡;另一受試者於兩個小時實施打2.5 mg 的瑪啡;第三位受試者於阻斷術後四小時施打5 mg 的瑪啡

結果

- 受試者平均82歲
- 女性共 9位
- 阻斷術平均施行時間： 八分鐘
- 術式皆平順, 無併發症
- 約有44% 的受試者於15分鐘內減輕疼痛 ,約有67% 的受試者於30分鐘內減輕疼痛.
- 術後三十分鐘後到四小時之間的這段時間, 疼痛指數沒有變化

結論

- “經超音波導引神經阻斷術”於急診單位是可行的,而且它們的成效是可以預期並且顯著的 。

The efficacy of recombinant activated factor VII in severe trauma

EVIDENCE-BASED EMERGENCY MEDICINE/CRITICALLY APPRAISED TOPIC

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研究目的

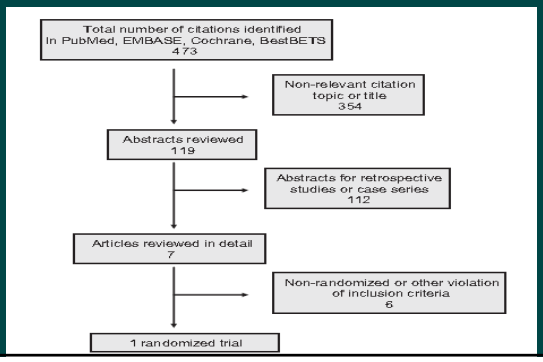
- 重度外傷時使用重組活化第七因子的療程,目前仍具爭議
- 實證醫學的角度,論證其 (使用重組活化第七因子) 效價、安全性、可行性

方法

- 文章搜尋來源包括MEDLINE 、 EMBASE 、 the Cochrane Library以及其他
- 我們限制了我們的評論用前瞻性觀察研究在緊急部門階段介入對rFVIIa的治療用途
- 嚴重外傷的病患裡,我們同時包含鈍傷以及穿刺傷

- The primary outcome measure of interest was 死亡率
- Secondary patient-important outcome measures 包括神經學症狀,手術時間延誤以及其他併發症
- Standard criteria were used to evaluate the quality of published trials

Process of selecting trials suitable for inclusion in the final review.



Summarizes the key features of the Boffard et al39 study that compared the use of rFVIIa in severe trauma to placebo.

Table 1. Characteristics of randomized trial evaluating the use of rFVIIa in severe trauma.

Study	Patients	Interventions	Comparisons	Outcomes
Boffard et al, 2005[39]	277 Patients across 32 international trauma centers, with a mean age of 34 y, with severe trauma (143 blunt, 134 penetrating) requiring >6 units of packed RBC within 4 h of admission	rFVIIa 200 μg/kg intravenously (IV) immediately after 8th unit of packed RBC, then 100 μg/kg IV repeated at 1 and 3 h	3 IV Injections of placebo	Primary: 48-h and 30-day mortality Secondary: units of packed RBC transfused in first 48 h, use of other transfusion products, ventilator and ICU days, MOF, ARDS Safety: adverse events, changes in coagulation-related laboranory variables

MOF, multi-organ failure; ARDS, adult respiratory distress syndrome.

Table 2. Assessment of susceptibility to important bias in the selected trial.

Criteria	Boffard et al, 2005 (n=277)[39]
Randomization	Yes
Concealment	Unclear, method of concealment not reported
Intention-to-treat analysis	Yes
Balance of study groups with respect to prognostically important variables	Groups similar with respect to age, sex, ISS score, GCS score, time to hospital, time from hospitalization to study treatment, vital signs, and biological variables
Blinding	Patients and care providers were blinded using placebo control group. Unclear whether data analysis was blinded.
Follow-up	3 patients lost to follow-up in rFVIIa group, 2 patients lost to follow-up in placebo group
Cointervention	Standard surgical intervention and resuscitation strategies for both placebo and rFVIIa groups. Transfusion guidelines similar for both groups in all study centers.

ISS, Injury Severity Score; *GCS*, Glasgow Coma Scale.

結果

- 僅一實驗(One randomized, blinded trial)合乎給訂的評估準則及要件(criteria)
- 使用重組活化第七因子(rFVIIa)與使用安慰劑(placebo)在死亡率並無顯著差異
- Our other selected secondary outcome measures of interest were not reported.

Table 3. Outcome measures in patients who have severe blunt or penetrating trauma and are receiving rFVIIa versus placebo.

	Boffard et al, 2005 (Severe Trauma) (n=277)[39]		
Outcome	rFVIIa, No. (%) (n=139)	Placebo, No. (%) (n=138)	RR (95% CI)
48-h mortality	25 (18)	23 (17)	1.09 (0.59–2.0)
30-day mortality	34 (24)	40 (29)	0.84 (0.57–1.25)
Patients with adverse events (thromboembolism)	6 (4)	6 (4)	0.99 (0.33–3.0)
Massive transfusion*	15 (11)	36 (26)	0.41 (0.24–0.93)
ARDS within 30 days	7 (5)	17 (12)	0.41 (0.18–0.95)
MOF within 30 days	7 (5)	16 (12)	0.43 (0.18–1.02)
Composite outcome of ARDS, MOF, or death (within 30 days)	40 (29)	53 (38)	0.75 (0.54–1.05)

RR, Relative risk, rFVIIa compared with placebo.
*Massive transfusion defined as patients alive at 48 hours who receive more than 12 units of RBCs within 48 hours of the first dose, which equals greater than 20 units of RBCs, inclusive of the 8 predose units.

Table 4. Subgroup analysis based on blunt and penetrating mechanism of injury.

	Boffard et al, 2005 (Blunt Trauma) (n=143)[39]			Boffard et al, 2005 (Penetrating Trauma) (n=134)[39]		
Outcome	rFVIIa, No. (%) (n=69)	Placebo, No. (%) (n=74)	RR (95% CI)	rFVIIa, No. (%) (n=70)	Placebo, No. (%) (n=64)	RR (95% CI)
48-h mortality	13 (19)	13 (18)	1.07 (0.54–2.14)	12 (17)	10 (16)	1.10 (0.51–2.36)
30-day mortality	17 (25)	22 (30)	0.83 (0.48–1.42)	17 (24)	18 (28)	0.86 (0.49–1.53)
Patients with adverse events (thromboembolism)	2 (3)	3 (4)	0.72 (0.12–4.15)	4 (6)	3 (4)	1.22 (0.28–5.24)

→ 使用重組活化第七因子(rFVIIa)與使用安慰劑(placebo)之48小時和30天死亡率, 效果所差無幾,有較寬的信賴區間(confidence intervals)

結論

→ 現有的證據來看,使用重組活化第七因子(rFVIIa)與使用安慰劑(placebo)之效果所差無幾

→ rFVIIa在嚴重外傷的治療效果與安全性仍須進一步研究

Critically Appraised Topic (CAT): Recombinant activated factor VII for severe trauma.

Question	In adult, nonhemophiliac patients with severe multisystem trauma requiring large amounts of fluid resuscitation or blood products that is not easily amenable to immediate surgical intervention, does the therapeutic use of rFVIIa at any dosing regimen, compared with placebo, improve the patient-oriented outcomes of mortality, neurologic status, delayed surgical interventions, and adverse effects?
Reviewed by	Nishijima DK, Zehtabchi S
Date of search	September 2008
Expiration date	September 2010
Clinical bottom line	Existing evidence does not show any benefit from using rFVIIa in severe multisystem trauma.
Search strategy	The search for randomized trials included PubMed, EMBASE, BestBETS, and the Cochrane Library, from the date of origin to September 2008.
Citations	1. Boffard KD, Riou B, Warren B, et al. Recombinant factor VIIa as adjunctive therapy for bleeding control in severely injured trauma patients: two parallel randomized, placebo-controlled, double-blind clinical trials. *J Trauma*. 2005;59:8-18.
Primary study characteristics	***Study Population*** 277 Trauma patients requiring at least 6 units of packed RBCs within 4 hours of admission, aged 16–65 years, from 32 centers in 8 countries. Excluded patients with cardiac arrest before drug administration, gunshot wound to the head, pH <7.0, GCS score <8, and injury ≥12 hours before randomization. ***Interventions*** 3 IV injections of rFVIIa (200, 100, 100 μg/kg), first dose given immediately after the 8th unit of RBC, the second and third doses given at 1 and 3 hours after first dose, respectively. Outcome measures Mortality, blood transfusion requirements, ICU days, multiorgan failure and acute respiratory distress syndrome at 30 days, and adverse events.
Critical appraisal	The study was randomized, blinded, achieved balance with respect to baseline characteristics, and adhered to intention-to-treat analysis. The number of patients lost to follow-up was minimal. Methods of randomization, enrollment, and concealment were not completely reported.

Results

Trial	RR (95%CI)
Primary outcome: mortality	
48-h Mortality	
Boffard et al	1.09(0.59–2.0)
30-Day mortality	
Boffard et al	0.84(0.57–1.25)


THANKS FOR YOUR ATTENTION