UNIVERSITAT DE BARCELONA

Efectividad del concentrado de fibrinógeno en pacientes traumáticos con hemorragia crítica

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USE OF HUMAN PROTHROMBIN COMPLEX CONCENTRATE AND HUMAN FIBRINOGEN CONCENTRATE ADMINISTRATION TO PATIENTS WITH HIGH-RISK OF SEVERE BLEEDING IN A TRAUMA HOSPITAL

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Background

Deficiency in prothrombin complex concentrates (PCC) and fibrinogen is a cause of massive haemorrhage whose correct management in emergency situations is controversial.

Methods

Retrospective observational study in a Trauma hospital. Patients with a documented life-threatening haemorrhage who received a PCC or fibrinogen prescription were included in the protocol, during a follow-up period of 6 months. Demographic data, treatment indication, INR (International Normalized Ratio) before and after treatment, admission diagnosis, PCC (II, VII, IX and X factors), fibrinogen dose, current oral anticoagulants (OAT) treatment, as well as data on administration of vitamin K, tranexamic acid or other hemoderivatives (red cells, platelets, plasma) was collected.

Results

A total of 18 patients were included in the study: 9 with PCC, 5 with fibrinogen, and 4 with both drugs. 60% and 71% of patients treated with PCC and fibrinogen, respectively, were women. Patient's mean age was 52 (range 18-90) for PCC and 58.12 (range 33-81) for fibrinogen.

- 20% of the patients who received PCC were being treated with oral anticoagulants (OAT) prior to the emergency bleeding.
- 64.71% had a politraumatism, and 82.35% were under surgical procedures when the PCC or fibrinogen was administered.

MEAN INR OF ALL PCC PATIENTS:
- **PRIOR:** 1.73 (SD 0.60).
- **AFTER:** 1,35 (SD 0,15)
- **MEAN DOSE:** 1680 UI (600 - 2400 UI). Being the dose refered to the IX factor.

MEAN INR OF OAT PATIENTS WITH PCC (20%):
- **PRIOR**: 2,60 (SD 0,40)
- **AFTER**: 1,31 (SD 0,05)

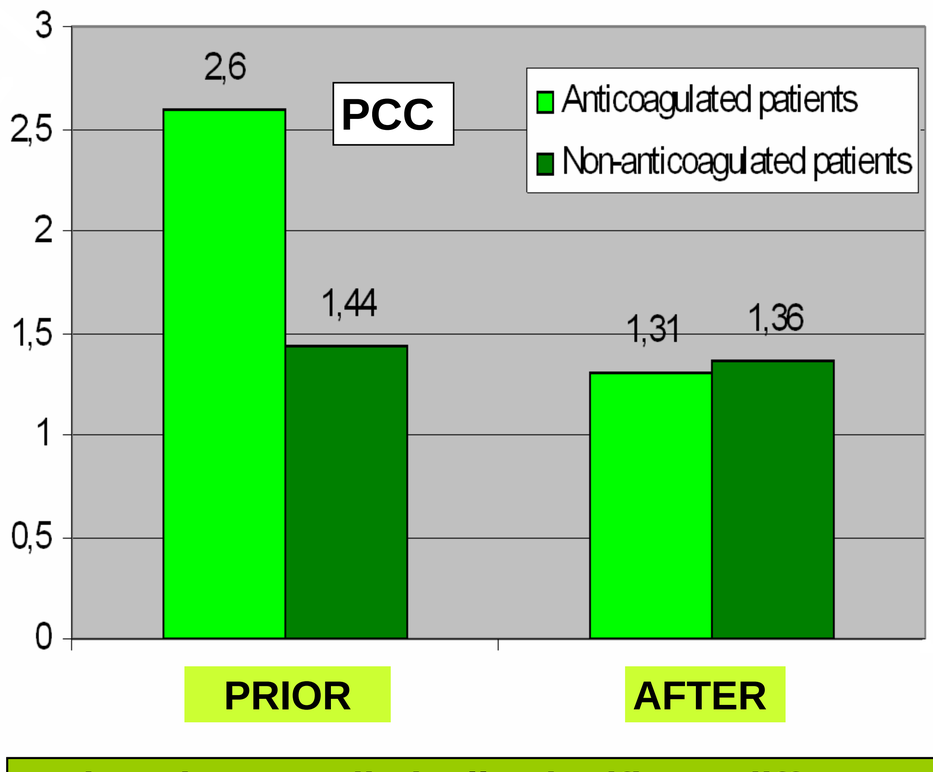
None of the anticoagulated patients were treated with fibrinogen.

FIBRINOGEN:
- **PRIOR:** fibrinogen mean levels were 1.95 (SD 1.18)
- **AFTER:** fibrinogen mean levels were 2,53 SD (1,04)
- **MEAN DOSE:** 2,38g. (1 - 4g.)
- **BIOLOGIC RECUPERATION:** 131.4 % (45 - 240 %). 1gr of fibrinogen causes an average increase of 0.47 g / L in fibrinogen plasma concentration.

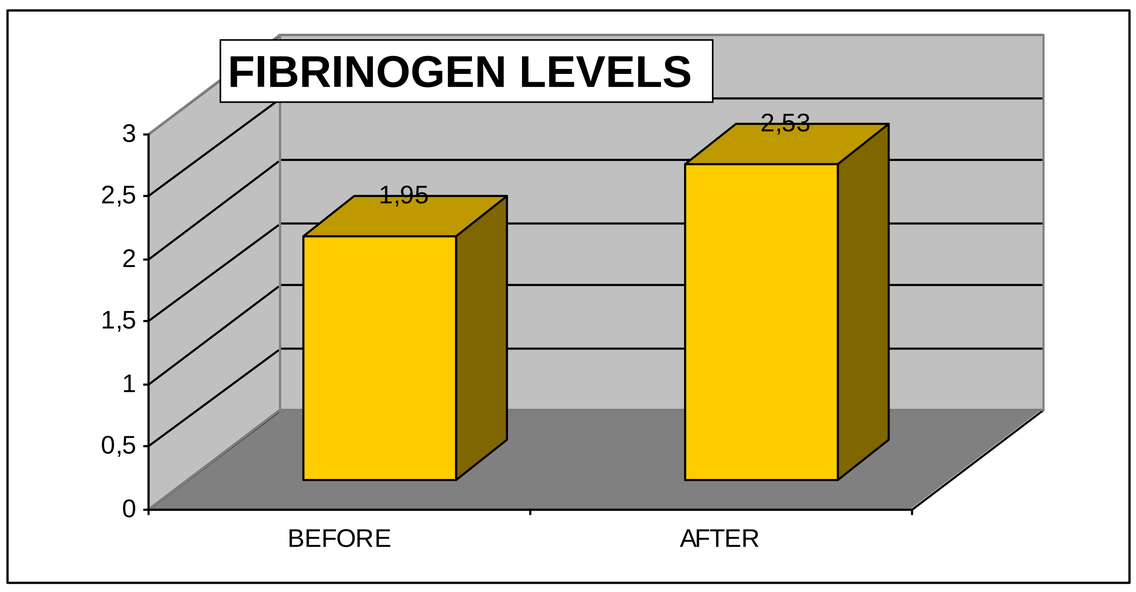
Survival after seven days was:
- **For PCC:**
  - **Anticoagulated: 50% (2patients)**
  - **Non-anticoagulated:100% (8 patients)**
- **For fibrinogen: 87,5% (8 patients)**

Objective

To ascertain how PCC and fibrinogen are used in patients with life-threatening hemorrhagic disorders (trauma and surgery), especially in patients with underlying disease states that limit PCC synthesis or fibrinogen synthesis.



There is a estadistically significant difference between OAT and NON-OAT patients (p=0,001, t-student-Fisher)



Conclusions

- **PCC treatment normalized INR among anticoagulated patients.**
- **Fibrinogen administration raised fibrinogen levels to the recommended serum levels range (according to the european guidelines).**
- **Consensus guidelines are needed for the appropriate therapeutic management of patients with severe bleeding.**
- **Clinical pharmacist should play an important role when managing patients with severe bleeding.**

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ESCP European Society of Clinical Pharmacy