

CASE REPORT: TREATMENT OF DIGOXIN INTOXICATION IN A HAEMODIALYSIS PATIENT USING ANTI-DIGOXIN ANTIBODIES AND PLASMAPHERESIS.

Martín Santamaría, A¹; Lozano Llano, C¹; Renedo Martínez, S²; Matutano Muñoz, A²; Sánchez Cerviño, AC¹; Rivera Ruiz, M¹; Guerrero Feria, I¹; Calvo Salvador, M¹; Rodríguez Marrodan, B¹; Delgado Tellez de Cepeda, L¹; Sánchez Guerrero, A¹.

¹ Hospital Pharmacy Department. ² Cardiology Department. Hospital Universitario Puerta de Hierro, Majadahonda, Madrid

BACKGROUND:

Digoxin-specific antibody fragments (Fab)

- ✓ Is effective in digoxin intoxication.
- X Clearance is reduced in patients with renal failure and chronic haemodialysis (HD).

Use plasmapheresis (PE) to remove complexes and prevent toxicity recurrence

AIM AND OBJECTIVES:



Patient: 84-year-old male with **atrial fibrillation**, congestive heart failure and **chronic kidney disease on HD**. His regular medication included 0.25mg digoxin per day. Was admitted to the emergency department for asthenia.

MATERIALS AND METHODS:



Physical examination: blood pressure of 160/92 mmHg, an ECG showing **AF with complete atrioventricular block** with a **heart rate (HR) of 40 bpm** and narrow QRS. **Digoxin levels 5.73 ng/ml** (0,8 ng/ml - 2,0 ng/ml). Admitted in the ICU

Timeline of plasma digoxin levels and the interventions performed:



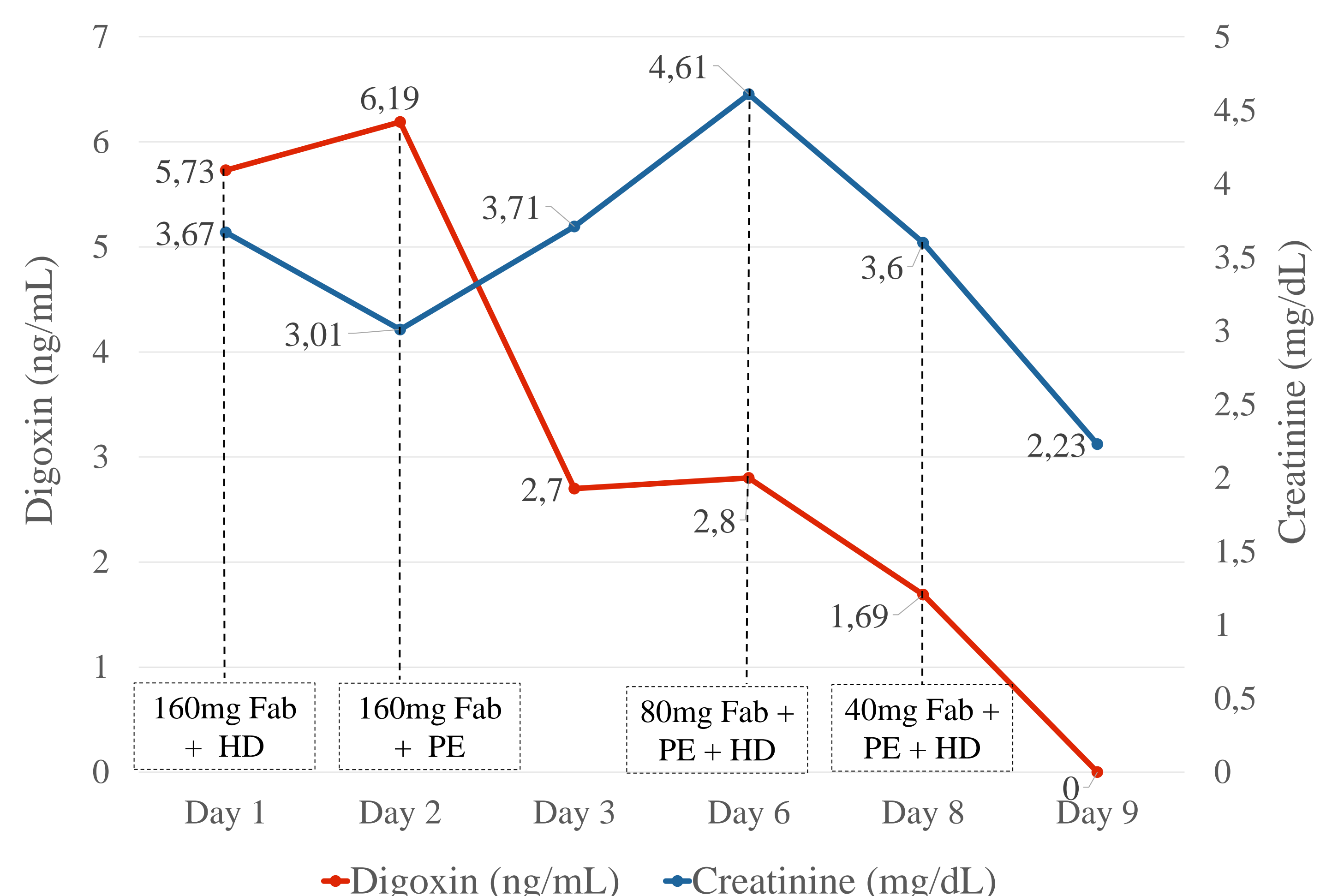
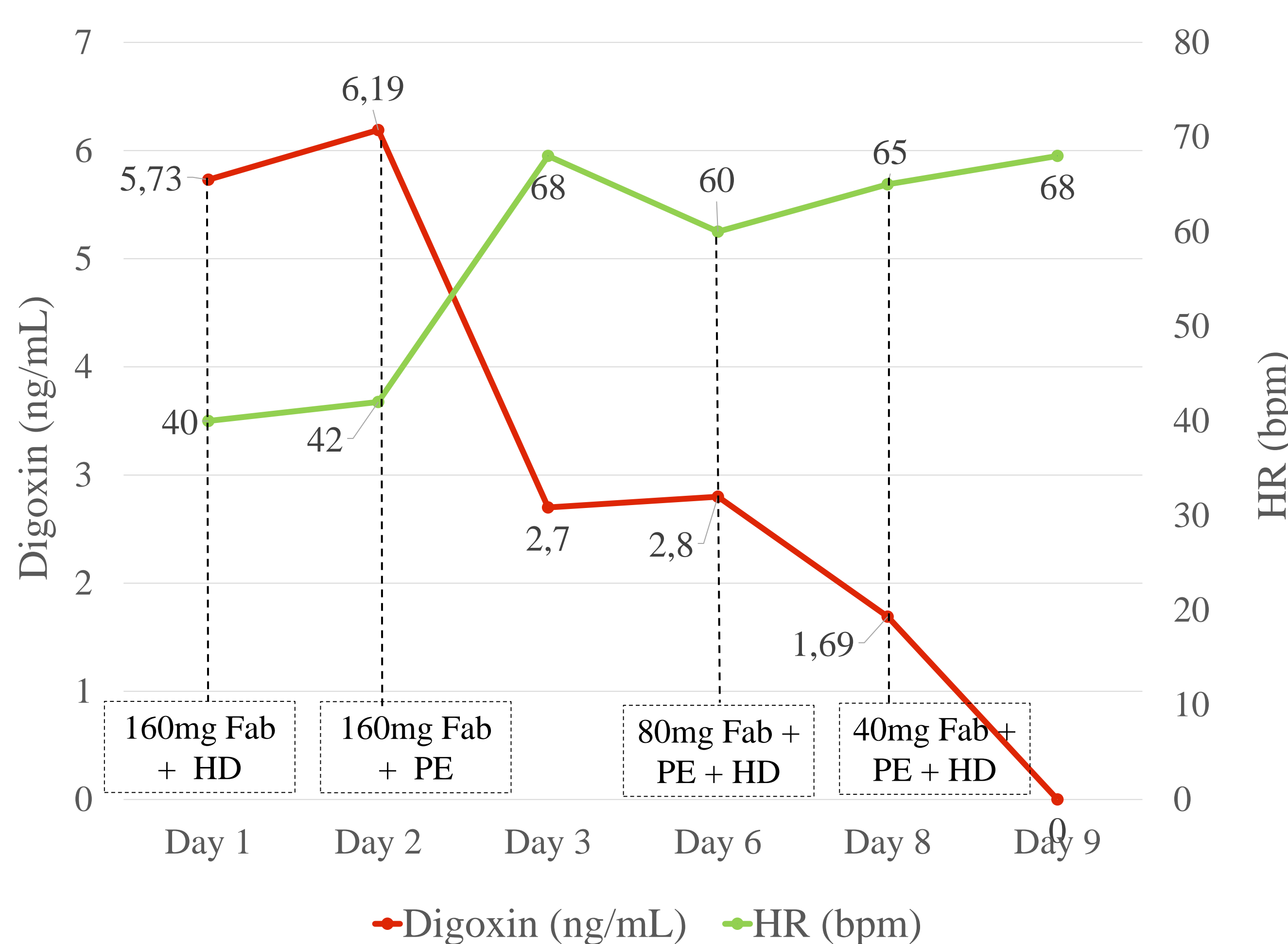
We used the following formula to calculate the dose of Fab to administer:

$$\text{Dose (n° of vials)} = \frac{\left[\text{Digoxin plasma concentration} \frac{\text{ng}}{\text{mL}} \right] * [\text{Weight in Kg}]}{100}$$



Rebound effect → we decided to perform a **PE 3 hours after Fab administration**

	Day 1	Day 2	Day 3	Day 6	Day 8	Day 9
Creatinine (mg/dL)	3.67	3.01	3.71	4.61	3.60	2.23
Digoxin (ng/mL)	5.73	6.19	2.7	2.8	1.69	< 0.8
Potassium (mmol/L)	5.6	3.4	3.8	4.4	4.6	4.9
HR (bpm)*	40	42	68	60	65	68
*Measured at 8:00 a.m.						
		160mg Fab + HD		80mg Fab + PE + HD		40mg Fab + PE + HD



RESULTS:

✓ Digoxin reduction was **43%**, **60%**, and **47%** after Fab + PE, performed 3 hours apart, with **heart rate stabilization** by day 9 and **clinical improvement**, leading to **ICU discharge**.

CONCLUSIONS:

- ✓ Fab + PE significantly reduced digoxin levels and improved clinical outcomes.
- ✓ Optimal PE timing remains uncertain (suggested 1-3h post-Fab).
- ✓ Further studies needed to refine clinical guidelines.

To consult the bibliography



eahp
european association
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**Hospital Universitario
Puerta de Hierro
Majadahonda**

To download the abstract



ana.martin.santamaria@salud.madrid.org