Manejo hemostático en cirugías de pacientes con hemofilia

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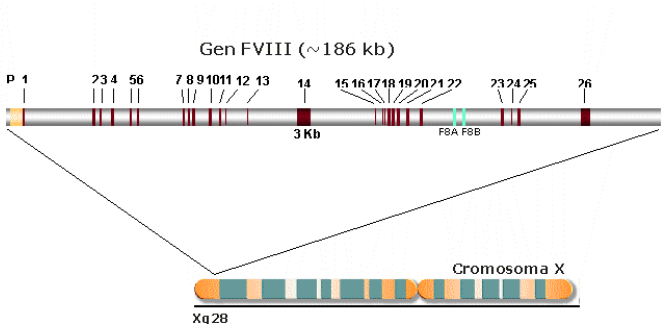
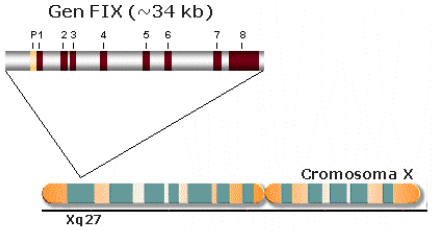
Unitat d'Hemofília. Hospital Vall d'Hebron
Barcelona

Puntos clave

- Tipo y grado de hemofilia
- Descartar la presencia de inhibidor
- Valorar estudio de trombofilia
  - ✓Factores de riesgo tromboembólico
  - ✓Tipo de intervención quirúrgica
- Administración de tratamiento
  - ✓En bolos
  - ✓En infusión contínua
- Niveles de factor en el pre y postoperatorio
- Días de tratamiento postintervención
- Indicación de la profilaxis tromboembólica

Tipos y grados de hemofilia

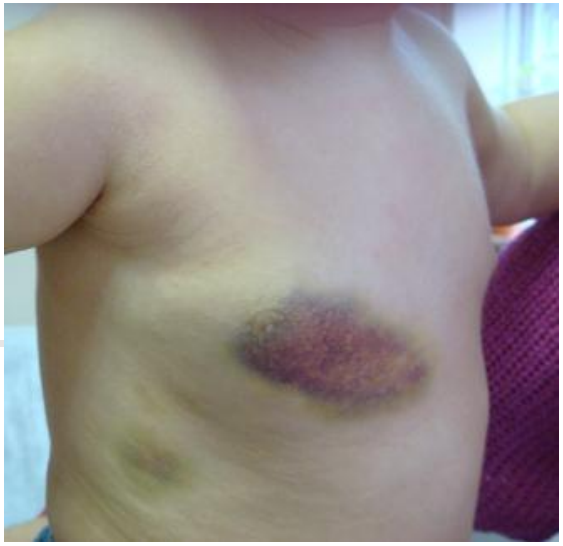




- A: Factor VIII
- B: Factor IX

- Grave <1%
- Moderada 1-5%
- Leve 5-30%

Hemorragias



- Grave
  - ✓espontáneas
  - ✓mínimos traumatismos
- Moderada
  - ✓traumatismos leves o moderados
- Leve
  - ✓asintomática
  - ✓estudio familiar
  - ✓estudio de hemostasia
  - ✓sangrado postquirúrgico

Riesgo quirúrgico

- Grave
  - ✓Alto riesgo quirúrgico
- Moderada
  - ✓Alto riesgo quirúrgico
- Leve
  - ✓Sangrado postquirúrgico

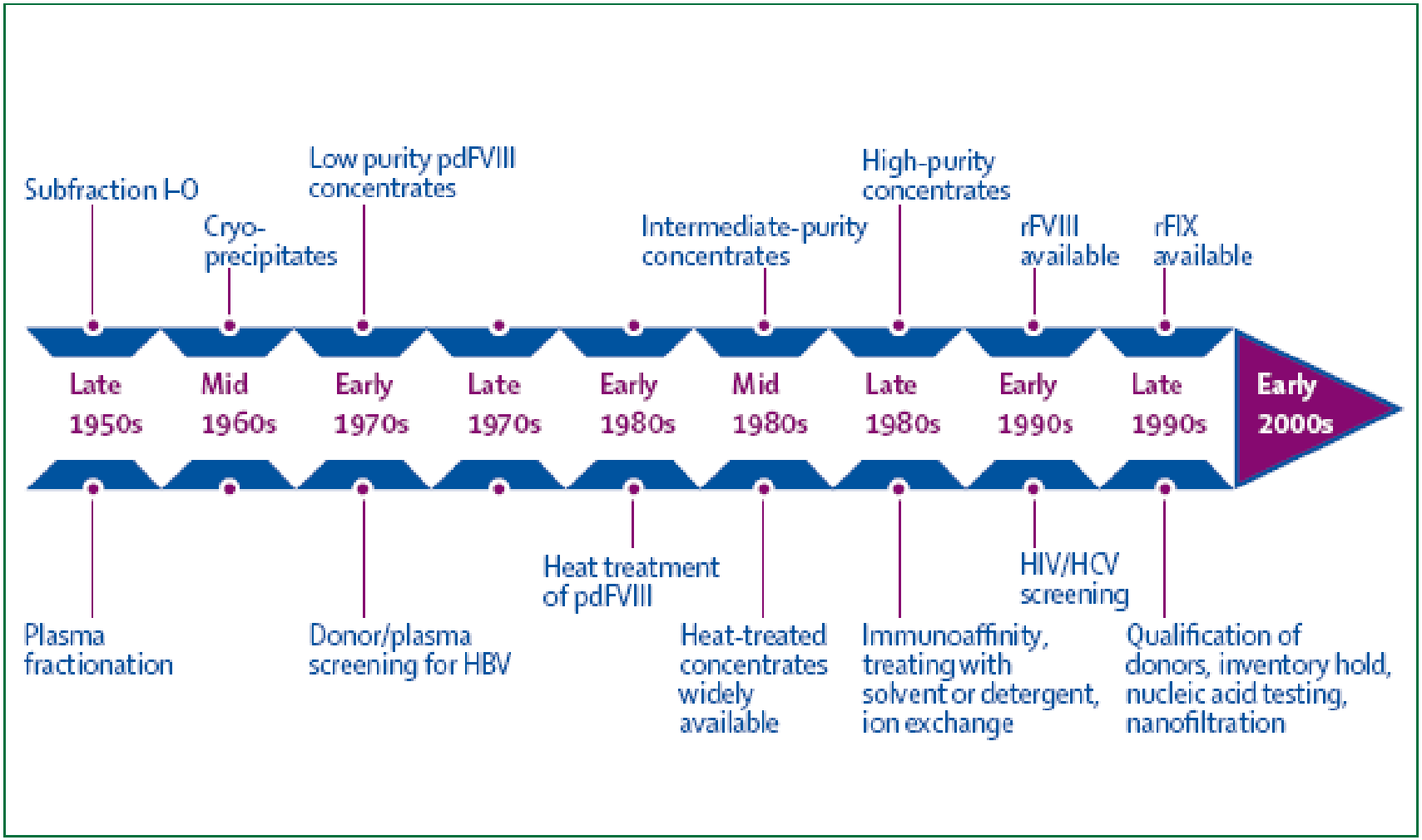
Primera descripción

- Talmud, Yebanot 64 b
  - *...si el primer hijo de una mujer es circuncidado y muere y el segundo hijo es circuncidado y muere, no debería circuncidarse al tercero...*

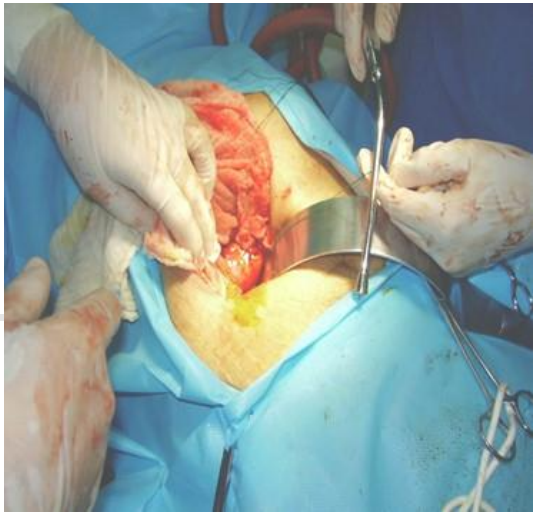
Rabi Judah

Cronología del tratamiento

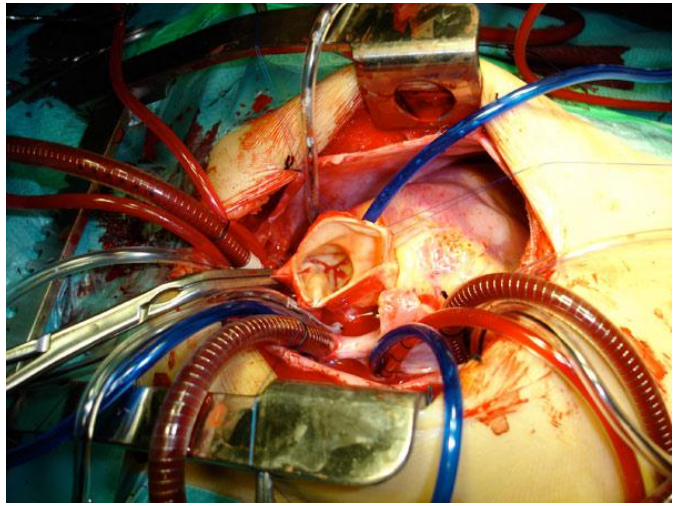
Key N S, Negrier C. *The Lancet* 2007



Hemorragia



- Intraoperatoria
  - ✓Hemostasia insuficiente
- Postoperatoria inmediata (<48 h)
  - ✓Causa local
  - ✓Hemostasia insuficiente
- Postoperatoria tardía (>48 h)
  - ✓Hemostasia insuficiente ?



Hemorragia postquirúrgica: 1,4-6,5%

Puntos clave

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- Niveles de factor en el pre y postoperatorio
- Días de tratamiento postintervención
- Indicación de la profilaxis tromboembólica

General Surgery in Patients With a Bleeding Diathesis: How We Do It

Kamal R. Aryal · D. Wiseman · Ajith K. Siriwardena · Paula H. B. Bolton-Maggs · Charles R. M. Hay · James Hill

1998-2008

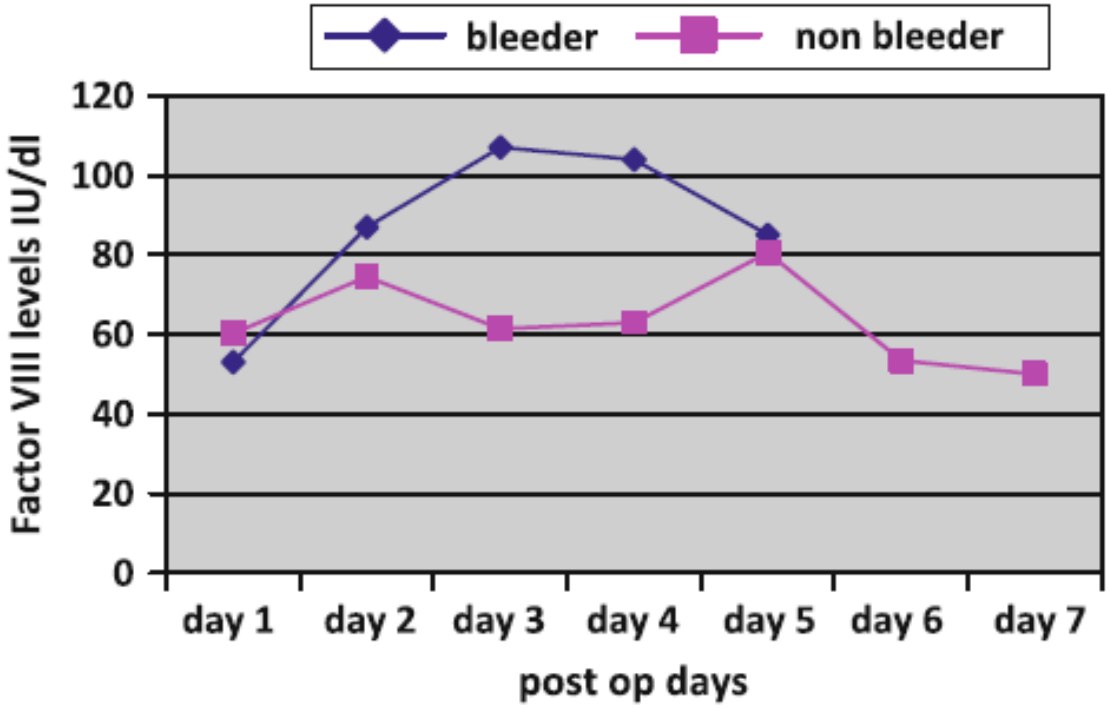
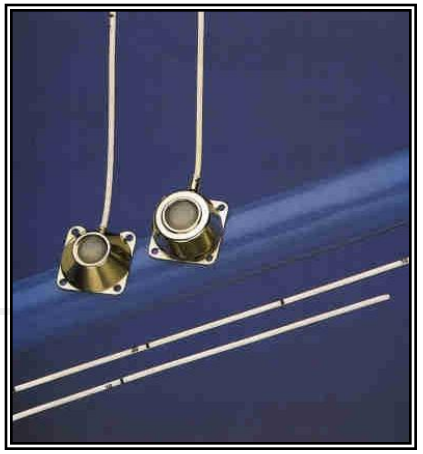


Fig. 5 Postoperative mean trough levels in hemophilia patients

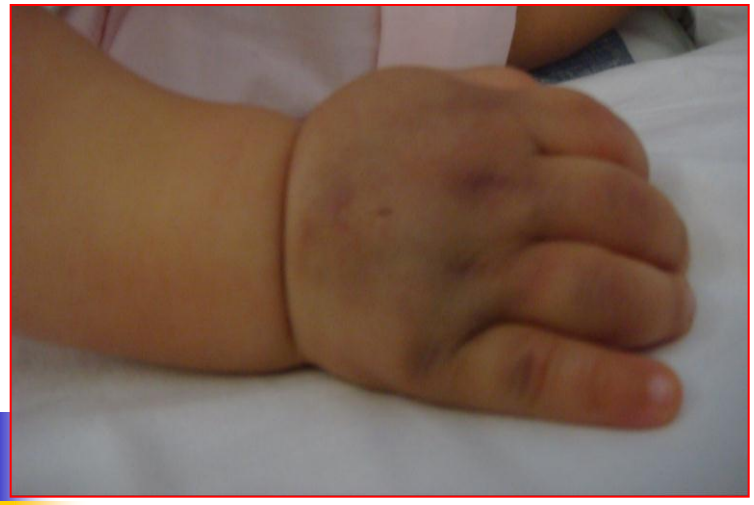
N=144/113

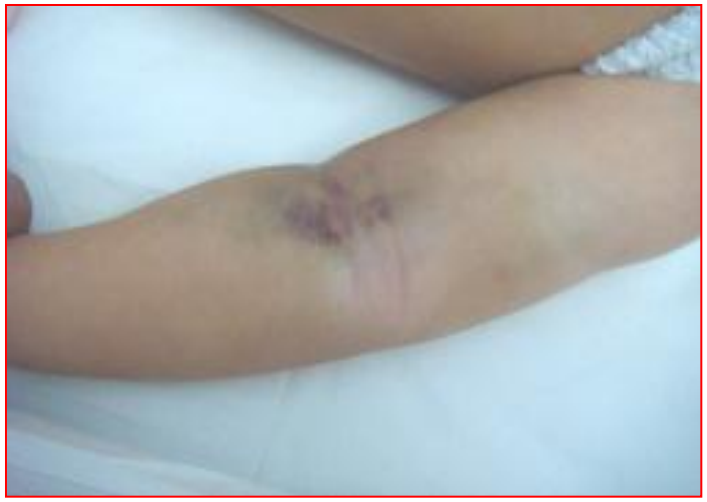
Hemorragia: 4%/10%

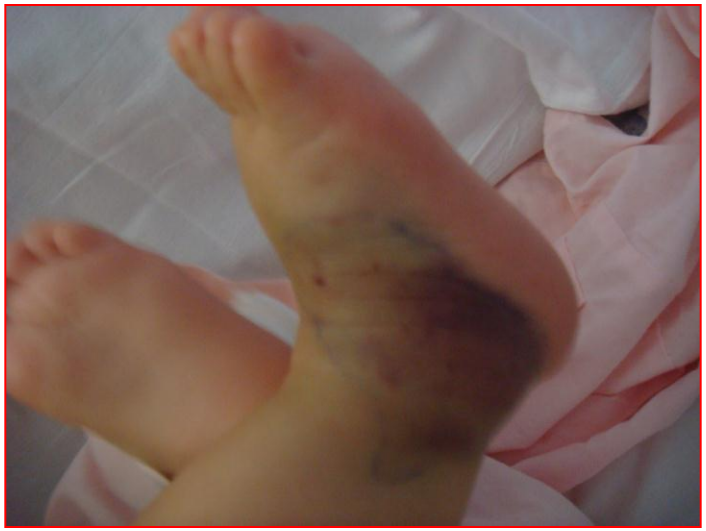
Cirugía menor

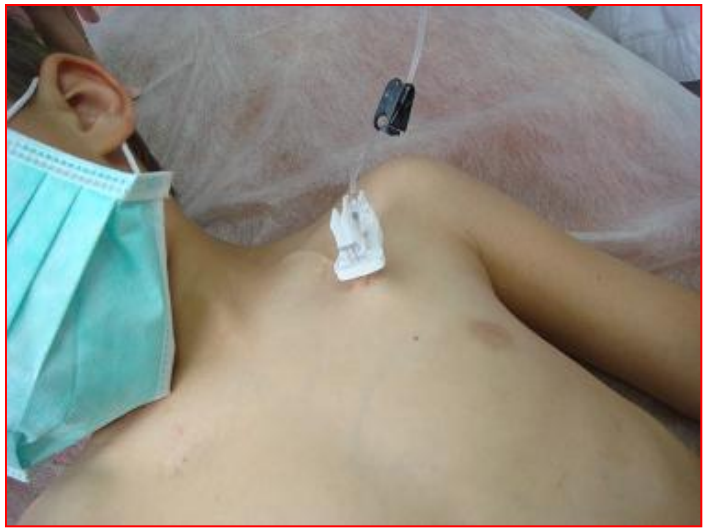


- Adenoidectomía
- Implantación de catéter central
- Circuncisión
- Cirugía dental
- Cataratas
- Biopsia hepática









Haemophilia (2011), 1–5

Operative management and outcomes in children with congenital bleeding disorders: a retrospective review at a single haemophilia treatment centre

1999-2010

Table 2. Surgical procedures.

Type of procedure	Number of procedure	% of Total procedures
CVL placement/removal	69	41
Dental	19	11
Myringotomy/tympanoplasty	16	10
Tonsillectomy/adenoidectomy	15	9
Musculoskeletal (non-synovectomy)	13	8
Synovectomy	8	5
Circumcision	8	5
Nasal cautery/septoplasty	7	4
Excision of subcutaneous cyst	4	2
Miscellaneous	9	5
Total	168	100

N=1,4%

N=26%

N=43%

N=7%

R. G. WATTS and R. P. COOK
Division of Pediatric Hematology-Oncology, University of Alabama at Birmingham, Birmingham, USA

Surgery in haemophilia patients with inhibitors, with special emphasis on orthopaedics: Madrid experience

E. C. RODRIGUEZ-MERCHAN,* V. JIMENEZ-YUSTE,† P. GOMEZ-CARDERO,* M. ALVAREZ-ROMAN,† M. MARTIN-SALCES† and A. RODRIGUEZ DE LA RUA†

**Department of Orthopaedics and Haemophilia Unit and †Department of Haematology and Haemophilia Unit, La Paz University Hospital, Madrid, Spain*

Table 2. Main data and results of non-orthopaedic procedures (57 haemophilia patients with inhibitors: 52 minor procedures, five major procedures).

Procedure	No. procedures	Haematological treatment	Result	Complications	Comments
Central catheter placements (m)	37	17 FEIBA, 20 rFVIIa	All good	None	None
Dental extractions (m)	10	2 FEIBA, 8 rFVIIa	All good	None	None
Lipoma (m)	1	FEIBA	Good	None	None
Hydrocele (m)	1	rFVIIa	Good	None	None
Cataract (m)	1	FEIBA	Good	None	None
Thoracotomy (lobectomy) (M)	1	rFVIIa	Poor	Death (pulmonary complications)	None
Craniotomy (M)	1	rFVIIa	Good	None	None
Piloroplasty (M)	1	rFVIIa	Good	None	None
Appendicectomy (M)	1	FEIBA	Good	None	None
Corneal transplant (M)	1	FEIBA	Good	None	None
Inguinal hernia (m)	2	2 rFVIIa	2 good	None	None

M, major procedure; m, minor procedure.

Haemophilia

Haemophilia (2010), **16**, 272–276 DOI: 10.1111/j.1365-2516.2009.02119.x

ORIGINAL ARTICLE *Paediatrics*

To circumcise or not to circumcise? Circumcision in patients with bleeding disorders

V. RODRIGUEZ,* R. TITAPIWATANAKUN,* C. MOIR,† K. A. SCHMIDT* and R. K. PRUTHI*

**Division of Pediatric Hematology and Oncology; and †Division of Pediatric Surgery, Mayo Clinic, Rochester, MN, USA*

We live in an era different from the times described in the Talmud, in which medical advances in the care of patients with bleeding disorders have made surgical interventions possible, minimizing the risk of bleeding if factor replacement is adequately provided. Although we discuss openly with our patients and parents the risks and benefits of circumcision, we always stress that bleeding complications can still occur despite appropriate coagulation factor replacement.

N=48

23%

ORIGINAL ARTICLE *Paediatrics*

A single centre experience in circumcision of haemophilia patients: Izmir protocol

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Medical School, Ege University, Bornova, Izmir, Turkey

Haemophilia (2010), **16**, 888–891

Age at diagnosis, median (range)	13 (3–72) months
Haemophilia A, % (*n*)	82 (41)
Severe	53.7 (22)
Moderate	39.0 (16)
Mild	7.3 (3)
Haemophilia B, % (*n*)	18 (9)
Severe	55.5 (5)
Moderate	22.2 (2)
Mild	22.2 (2)
Age at circumcision, median (range)	9 (1–16) years
Weight at circumcision, median (range)	30 (10–70) kg
Total amount of factor VIII/IX used for circumcision [factor concentrate (unit)/weight (kg)], median (range)	175 (102–600) U kg^{-1}
Plasma FVIII level before circumcision, median (range)	97 (73–100)
Concurrent surgical operation, % (*n*)	4.0 (2)
Complication, % (*n*)	
Bleeding	6.0 (3)
Infection	0.0 (0)
Duration of hospitalization, median (range)	3 (3–9) days

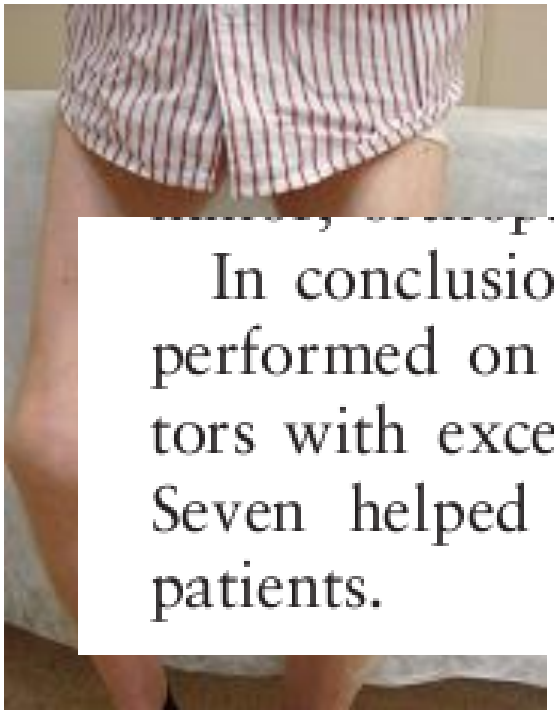
6%

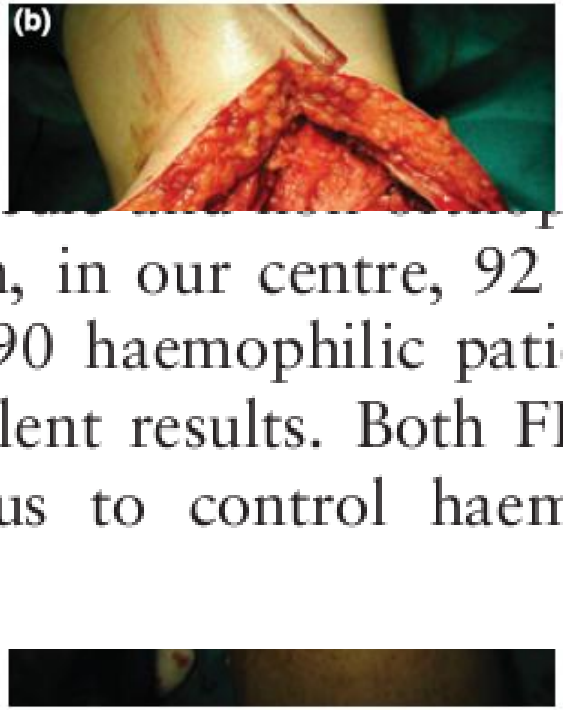
SURGERY

Surgery in haemophilia patients with inhibitors, with special emphasis on orthopaedics: Madrid experience

E. C. RODRIGUEZ-MERCHAN,* V. JIMENEZ-YUSTE,† P. GOMEZ-CARDERO,* M. ALVAREZ-ROMAN,† M. MARTIN-SALCES† and A. RODRIGUEZ DE LA RUA†

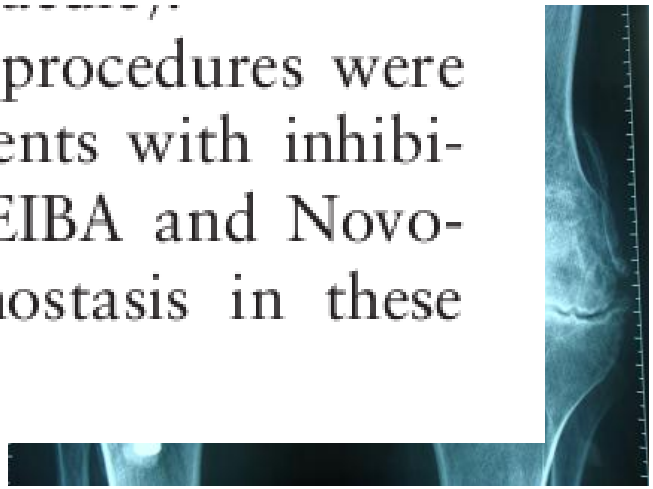
**Department of Orthopaedics and Haemophilia Unit and †Department of Haematology and Haemophilia Unit, La Paz University Hospital, Madrid, Spain*





N=87/92

In conclusion, in our centre, 92 procedures were performed on 90 haemophilic patients with inhibitors with excellent results. Both FEIBA and NovoSeven helped us to control haemostasis in these patients.



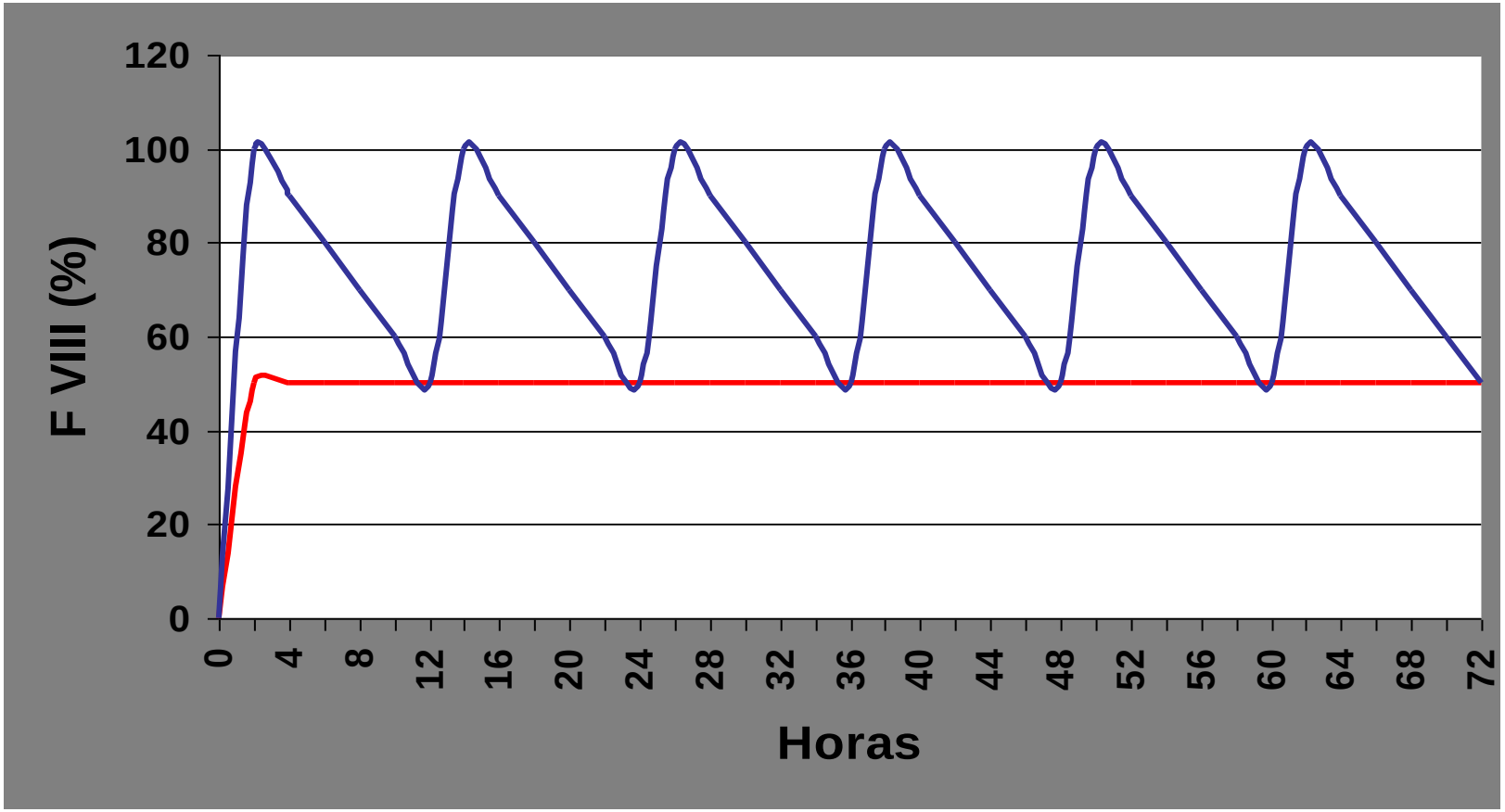
Niveles y semivida plasmática

Deficiencia	Niveles	Semivida
Fibrinógeno	>0,5 g/L	3-6 d
Protrombina	10-25%	2-5 d
V	10-30%	12-24 h
VII	>10%	2-6 h
VIII	30-40%; 80-100%	12-18 h
IX	30-40%; 80-100%	18-24 h
X	10-40%	20-40 h
XI	20-30%	40-80 h
XII	---	---
XIII	>5%	20 d

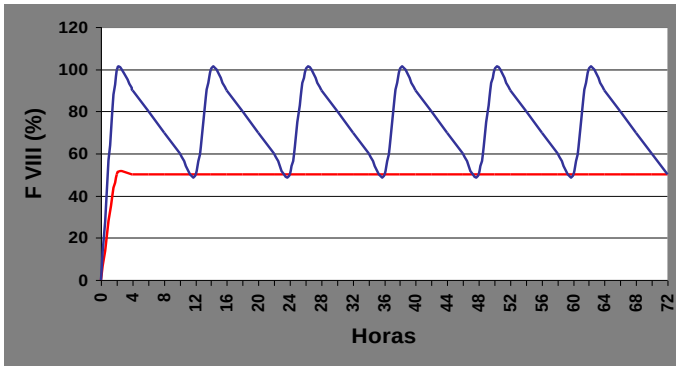
Tratamiento sustitutivo

- Debe administrarse el factor antes de la intervención y control analítico postdosis
- Dosis
  - ✓ FVIII: 1 UI/ Kg ↑ 2 UI/dl
  - ✓ FIX: 1UI/Kg ↑ 1UI/dl

Infusión contínua

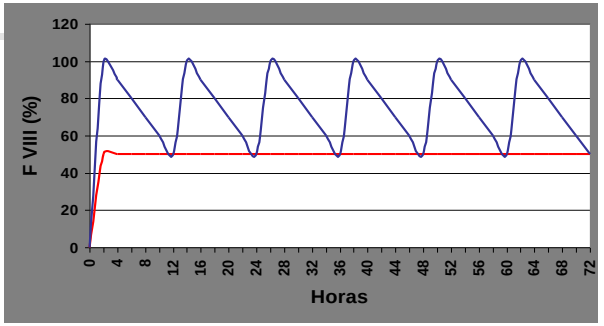


Infusión contínua



- Inicio en bolos
- Velocidad de infusión en bomba
  - ✓ U/kg/h de FVIII = 3,52 (ml/kg/h) x concentración deseada (U/ml)
  - ✓ U/kg/h de FIX = 4,99 (ml/kg/h) x concentración deseada (U/ml)

Infusión contínua



- Ventajas
  - ✓Mantiene niveles terapéuticos constantes
  - ✓Fácil monitorización
- Inconvenientes
  - ✓Disponer de bomba de infusión
  - ✓Complicaciones locales
- Dudas
  - ✓Profilaxis de flebitis local

Haemophilia

Haemophilia (2010), **16**, 740–746 DOI: 10.1111/j.1365-2516.2010.02244.x

ORIGINAL ARTICLE *Clinical haemophilia*

Continuous infusion during total joint arthroplasty in Japanese haemophilia A patients: comparison study among two recombinants and one plasma-derived factor VIII

H. TAKEDANI

Department of Joint Surgery, Research Hospital of The Institute of Medical Science, The University of Tokyo, Tokyo, Japan

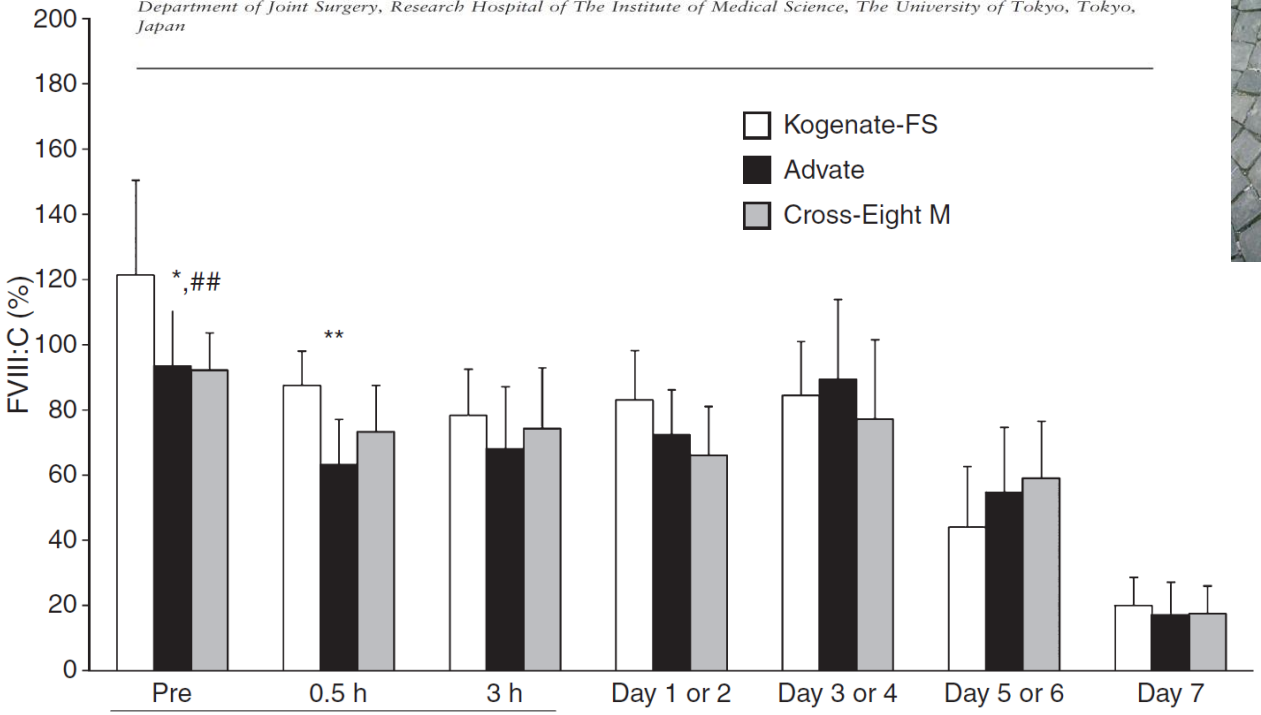


Table 2. Pharmacokinetic analysis and product factor activity.

	Unit	Kogenate-FS	Advate	Cross-Eight M	Total	Statistic
Sample	Counts	11	6	11	28	
IVR	(IU dL^{-1}) per (IU kg^{-1})	1.91 ± 0.4	1.86 ± 0.5	1.83 ± 0.2	1.86 ± 0.4	*ns*
Half-life	h	13.7 ± 3.2	11.7 ± 4.0	13.2 ± 3.5	13.1 ± 3.5	*ns*
Batches	Counts	15	14	21		
Activity	IU per vial	1147 ± 47.4	1041 ± 34.7	1135.2 ± 39.1	1112 ± 60.3	*,†

Puntos clave

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- Días de tratamiento postintervención
- Indicación de la profilaxis tromboembólica

REVIEW ARTICLE

Replacement therapy for invasive procedures in patients with haemophilia: literature review, European survey and recommendations

C. HERMANS,* C. ALTISENT,† A. BATOROVA,‡ H. CHAMBOST,§ P. DE MOERLOOSE,¶ A. KARAFOULIDOU,** R. KLAMROTH,†† M. RICHARDS,‡‡ B. WHITE§§ and G. DOLAN¶¶ on behalf of THE EUROPEAN HAEMOPHILIA THERAPY STANDARDISATION BOARD

Haemophilia (2009), **15**, 639–658

Encuesta europea

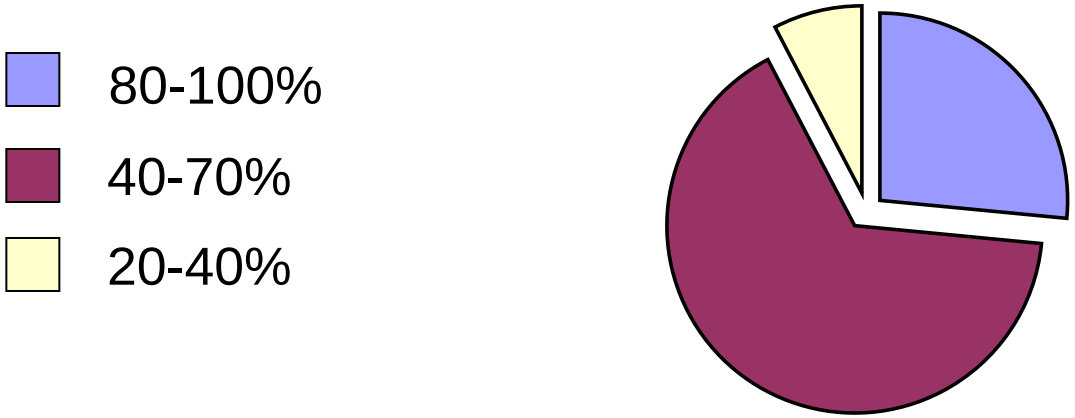
European Haemophilia Therapy Standardisation Board

- Ámbito
  - ✓Países 15
  - ✓Centros 26
  - ✓Pacientes 3.633 (hemofilia A grave)
- Objetivos
  - ✓Conocer pautas terapéuticas
  - ✓Identificar
    - Puntos de controversia
    - Problemas por resolver
    - Futuras investigaciones
  - ✓Elaborar recomendaciones

Extraccción dentaria

European Haemophilia Therapy Standardisation Board

Niveles preoperatorio



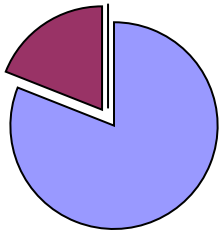
Implantación de catéter central

European Haemophilia Therapy Standardisation Board

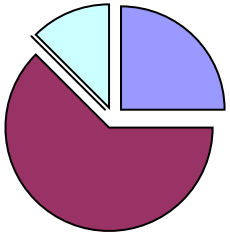
Niveles pre y postoperatorio

- 80-100%
- 40-70%
- 20-40%
- No tratamiento

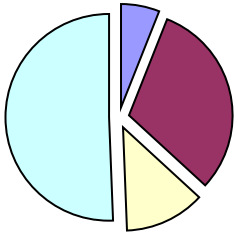
Preoperatorio



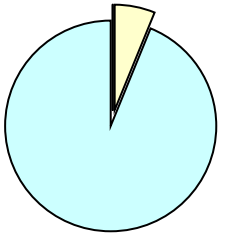
1-3 días



4-7 días



>7 días



Artroplastia de rodilla

European Haemophilia Therapy Standardisation Board

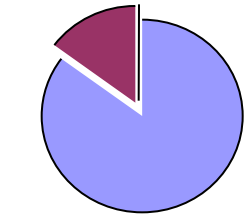
Nivel preoperatorio 80-100%

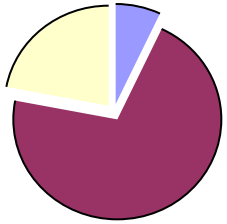
Niveles postoperatorio

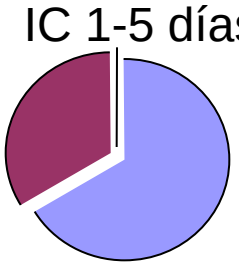
80-100%

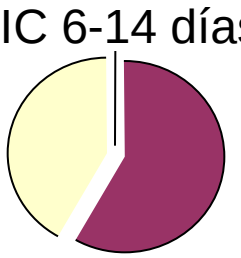
40-70%

20-40%









Revisión bibliográfica
cirugía mayor

- Estudios clínicos 35
  - ✓ Analizables 31
- Pacientes 1.114
  - ✓ Hemofilia A 862
  - ✓ Hemofilia B 241
- Intervenciones 1.328
  - ✓ Ortopédicas 707
- Tipo de tratamiento
  - ✓ En bolus 23
  - ✓ Infusión contínua 16
  - ✓ Ambos 5

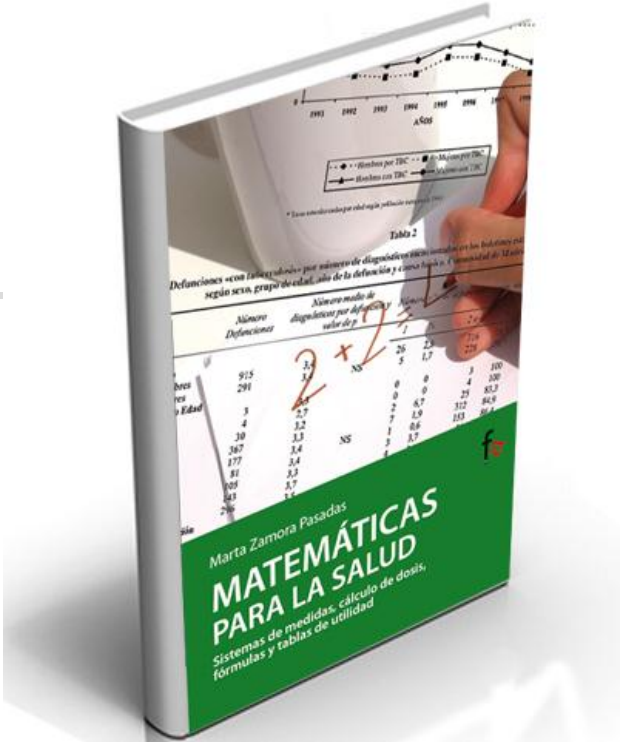
Hermans C et al. Haemophilia 2009; 15: 639-658.

Table 1. Major surgery in patients with haemophilia: literature review of replacement therapy.

First author	Year	References	Level of evidence	All (*n*)	A (*n*)	B (*n*)	Major surgery all (*n*)	Orthopaedic surgery (*n*)	Bolus infusion (*n*)	Continuous infusion (*n*)	Factor level, pre-operative (%)	Factor level, 1st week postoperative (%)	Factor level, 2nd week postoperative (%)	Duration of treatment (days)	Antifibrinolytics (yes/no)	Outcome bleeds (*n*)	Phlebitis (*n*)
Nilson IM	1977	10	3 (sc, uc)	77	61	16	108	53	108	0	>90	>30–40	>10–20	14–28	Yes	4	0
Krieger JN	1977	11	3 (sc, uc)	31	25	6	58	18	58	0	100	60	40	5–12	No	3	0
Rudowski WJ	1981	12	3 (sc, uc)	101	85	16	121	33	121	0	>50	>50	NA	NA	NA	11	NA
Willert HG	1983	13	3 (sc, uc)	18	16	2	18	18	18	0	>60	50	50	NA	No	0	0
Kasper CK	1985	14	3 (sc, uc)	163	163	0	350	194	350	0	>80	50	50	14	NA	72	0
Brown B	1986	15	3 (sc, uc)	22	18	4	23	0	23	0	100	50	25	7–14	NA	4	0
Kitchens CS	1986	16	3 (sc, uc)	36	30	6	36	NA	36	0	>80	NA	NA	5–18	NA	2	1
Martinowitz U	1992	17	3 (sc, hc)	25	25	0	25	NA	11	14	>80	>50	>30	7–14	Yes	0	0
Schulman S	1994	18	3 (sc, hc)	12	12	0	12	10	0	12	>80	>50	>30	4–18	Yes	0	5
Bushan V	1994	19	3 (sc, uc)	37	32	5	26	14	26	0	80/ 50–80	20–40/ 15–30	20–40/ 15–30	10	No	7	NA
Lofqvist T	1996	20	3 (sc, uc)	66	53	13	98	98	98	0	100	>30–40	>10–20	14–28	Yes	1	0
Hay CR	1996	21	3 (sc, uc)	24	24	0	21	20	0	21	100	80	NA	5 (CI)	No	0	0
Shapiro AD	1997	22	2 (mc, uc)	74	0	74	34	24	34	0	>60	>30	NA	10	No	0	0
White GC	1997	23	2 (mc, uc)	13	13	0	9	5	NA	NA	NA	NA	NA	NA	NA	0	NA
Srivastava A	1998	24	3 (sc, uc)	18	11	7	20	14	20	0	>80/ >60	>20–40/ >15–30	>15–30/ >10–20	11	No	1	0
Heeg M	1998	25	3 (sc, uc)	9	8	1	12	12	12	0	>100	>50	>25	14	No	1	0
Campbell PJ	1998	26	3 (sc, hc)	21	18	0	18	18	8	10	100	>80	NA	13–17	No	8	1
Gosh J	1998	27	3 (sc, uc)	16	12	4	7	2	7	0	>60	>30	NA	10	Yes	2	0
Negrier C	1998	28	3 (sc, uc)	13	9	4	13	10	0	13	>80	>80	>50	9–22	No	0	0
Tagariello G	1999	29	3 (sc, hc)	15	14	1	11	9	0	11	>80	>70/>40	>40/>20	10	Yes	0	2
Rochat C	1999	30	3 (sc, hc)	5	5	0	5	5	0	5	>80	>50	NA	5 (CI)	No	0	5
Scharrer I	2000	31	2 (mc, uc)	15	15	0	8	4	8	0	NA	NA	NA	12	No	0	0
Batorova A	2000	32	2 (sc, c)	40	40	0	43	31	18	25	>80	>50	>30	12	Yes	3	4
Bastounis E	2000	33	3 (sc, uc)	65	43	15	58	6	58	0	>80	>30	>30	14	No	2	0
Chowdary P	2001	34	3 (sc, uc)	6	0	6	5	3	0	5	>80	>80	NA	3–10	No	0	2
Scharrer I	2002	35	2 (mc, uc)	22	22	0	13	7	13	0	NA	NA	NA	12–26	No	0	0
Mishra V	2002	36	3 (sc, uc)	9	6	2	8	8	0	8	>90	>50–70	>30	9	Yes	0	0
Ragni MV	2002	37	2 (mc, uc)	26	0	26	23	11	14	9	>80	NA	NA	10–20	No	0	1
Dingli D	2002	38	3 (sc, uc)	28	28	0	35	25	0	35	>80	>80	>50	6 (CI)	No	5	0
Hoots WK	2003	39	2 (mc, uc)	28	0	28	25	21	0	25	>90	>70	NA	6 (CI)	No	0	3
Evans G	2003	40	3 (sc, uc)	4	0	4	5	5	0	5	>90	>70	NA	3–54	No	1	0
Lusher JM	2003	41	2 (mc, uc)	42	42	0	48	NA	48	0	>70	NA	NA	NA	NA	0	0
Wolf DM	2004	42	3 (mc, uc)	8	8	0	5	5	5	0	>90	NA	NA	9–21	NA	0	0
Stieltjes N	2004	43	3 (mc, uc)	16	16	0	18	15	0	18	NA	NA	NA	5–21	Yes	4	1
Lee V	2004	44	3 (sc, uc)	9	8	1	9	9	7	2	>80	>30	>10–20	5–44	No	0	0
				1114	862	241	1328	707	1101	218						131	25

CI, continuous infusion; hc, historical controls; mc, multi-centre; NA, not available; sc, single centre; uc, uncontrolled.

Resultados
niveles hemostáticos



- Preoperatorio inmediato 26/31
  - ✓ >80% en 26 de 31
- Postoperatorio 1ª semana 27/31
  - ✓ > 70% en 8
  - ✓ > 50% en 11
  - ✓ > 20-30% en 8
- Postoperatorio 2ª semana 18/35
  - ✓ > 50% en 7
  - ✓ > 30% en 4
  - ✓ > 10-20% en 7
- Duración
  - ✓ 5-14 días en 19
  - ✓ 15-21 días en 6
  - ✓ >28 días en 6

Hermans C et al. Haemophilia 2009; 15: 639-658.

Resultados
niveles hemostáticos

Indicación	Variación	Días	Hemorragia
Biopsia hepática	70-100%	1-7	0,5%
Amigdalectomía	90-100%	5-11	5%
Catéter	100%	3-10	10%
Circuncisión	50-60%	2-4	50%
Cirugía dental	30-50%	1	ND

Hermans C et al. Haemophilia 2009; 15: 639-658.

Revisión bibliográfica

- No existe una clara correlación entre el sangrado postoperatorio y los niveles de factor
- Flebitis local de 25 de 218 infusiones contínuas
- No se recomienda tratamiento profiláctico tromboembólico con anticoagulantes

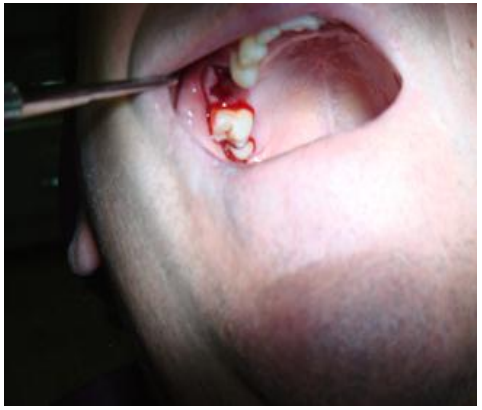
Hermans C et al. Haemophilia 2009; 15: 639-658.

Limitaciones de la bibliografía

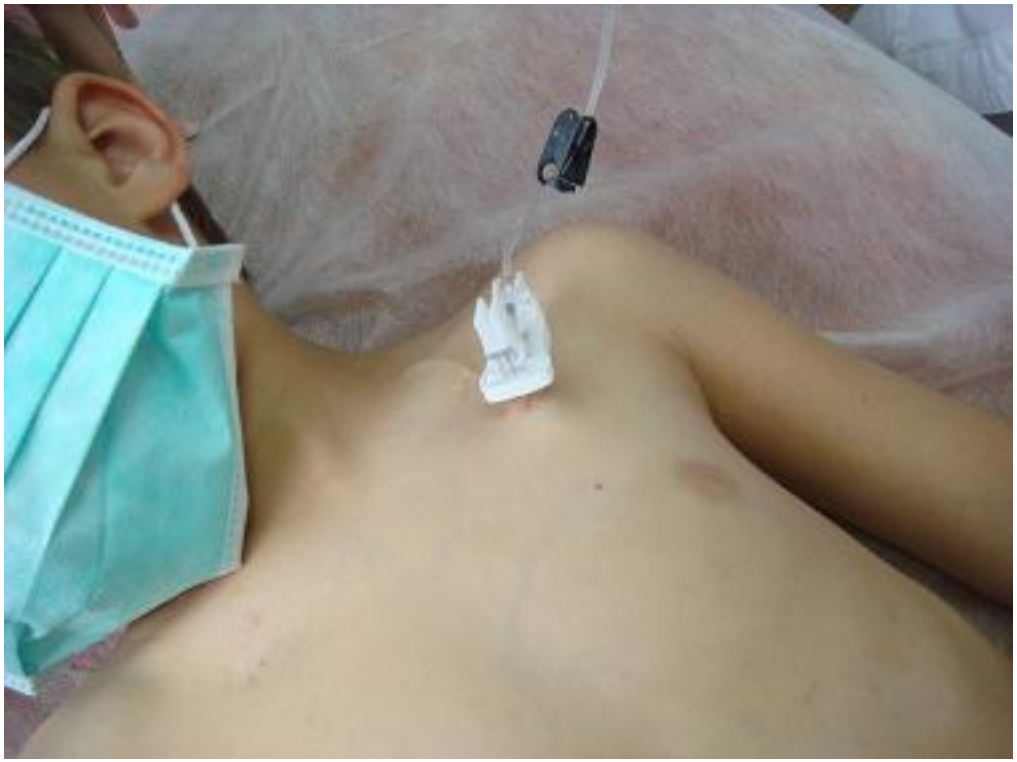
- Escaso número de pacientes
- Información insuficiente
  - ✓ niveles terapéuticos
  - ✓ días de tratamiento
  - ✓ complicaciones hemorrágicas

Extracción dentaria

- Nivel mínimo: 50% (B-III)
- Antifibrinolíticos durante 7 días (A-I)
- Considerar la aplicación de hemostático local



Port-A-Cath

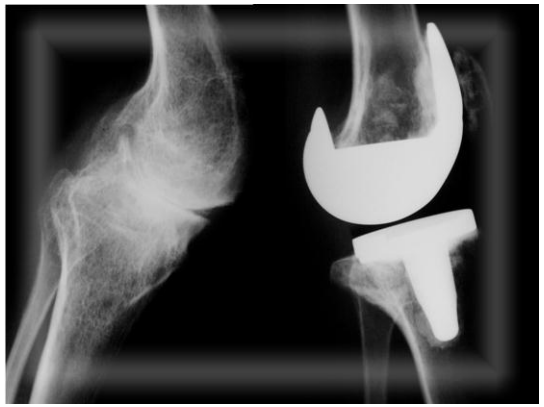


- Preoperatorio: 80%
- Postoperatorio 3 días (B-III)

- ¿Cuándo puede utilizarse?

Cirugía ortopédica

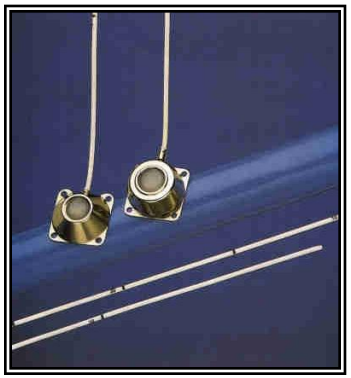
- Preoperatorio: 80-100% (B-III)
- Postoperatorio (C-IV)
- >50% → primera semana
- >30% → segunda semana
- Infusión contínua segura
- Valorar antifibrinolíticos y tromboprofilaxis



How to manage invasive procedures in children with haemophilia

Rolf C. R. Ljung and Karin Knobe

- Circuncisión
- Cirugía dental
- Cateter
- Amigdalectomia



In summary, there is no established consensus of how to treat a child with haemophilia during different surgical procedures. However, the literature suggests rather uniform agreement on some guiding principles:

British Journal of Haematology, 2012, **157,** 519–528

How to manage invasive procedures in children with haemophilia

1 FVIII/IX concentration at 80–100% before a surgical procedure.

2 Approximately 3 d postoperative treatment after minor surgery, 7–10 d after major surgery and even longer after intracranial procedures.

3 The youngest children have a shorter half-life of FVIII/IX and are in need of more frequent dosing and monitoring of factor concentrations.

4 Surgery is possible in patients with inhibitors by use of bypassing agents but at a higher risk of bleeding complications.

How to manage invasive procedures in children with haemophilia

5 Children with mild haemophilia A should, if possible, be treated with DDAVP and antifibrinolytics.

6 Surgical procedures should be avoided during the first 20 exposure days due to a potential risk of inhibitor development.

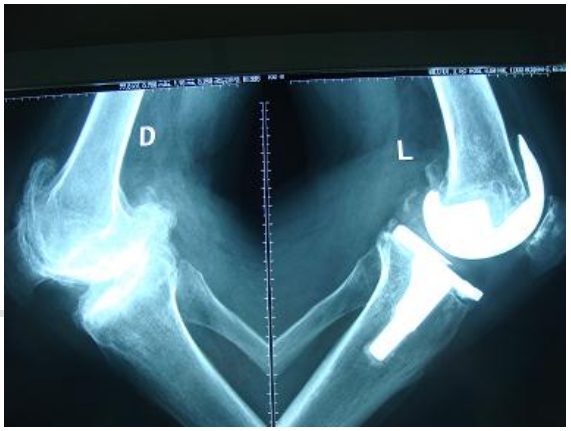
7 In the neonate, and in particular in the preterm neonate, special considerations may be necessary due to different concentration of various coagulation factors compared to after the neonatal period.

Puntos clave

- Tipo y grado de hemofilia
- Descartar la presencia de inhibidor
- Valorar estudio de trombofilia
  - ✓ Factores de riesgo tromboembólico
  - ✓ Tipo de intervención quirúrgica
- Administración de tratamiento
  - ✓ En bolos
  - ✓ En infusión contínua
- Niveles de factor en el pre y postoperatorio
- Días de tratamiento postintervención
- Indicación de la profilaxis tromboembólica

Prevention of VTE Following Total Hip and Knee Arthroplasty in Hemophilia Patients

MATTHEW I. STEIN, MD; JUSTIN PARK, MD; STEPHEN RATERMAN, MD



Orthopedics
May 2011 - Volume 34 · Issue 5: 389-392

educational objectives

As a result of reading this article, physicians should be able to:

1. Demonstrate how elective total joint arthroplasty has been shown to have good outcomes in hemophilic patients.

2. Explain the impact of factor replacement therapy on thrombembolic events in hemophilic patients.

3. Assess postoperative thromboembolism following total hip arthroplasty (THA) and total knee arthroplasty (TKA) in hemophilic patients.

Prevention of VTE Following Total Hip and Knee Arthroplasty in Hemophilia Patients

MATTHEW I. STEIN, MD; JUSTIN PARK, MD; STEPHEN RATERMAN, MD

SUMMARY AND RECOMMENDATIONS

The role of prophylactic management of postoperative thromboembolism in the hemophilic population deserves more attention. While the debate continues regarding the optimal postoperative DVT prophylactic regimen in the general population following THA and TKA, extensive research regarding prophylactic protocols in hemophilic patients is needed before evidence-based recommendations can be made.

Venous thromboembolic disease in patients with haemophilia

Cedric Hermans *

Division of Haematology, Haemostasis and Thrombosis Unit, Cliniques universitaires Saint-Luc, Université catholique de Louvain, Brussels,

Thrombosis Research 130 (2012) S50–S52

Current practice of thromboprophylaxis in hemophilic surgical patients

There is currently a lack of consensus and no clear guidelines for thromboprophylaxis for persons with hemophilia without inhibitors. This is illustrated in three surveys of current practice in hemophilia centers. Hermans et al., in a multicenter European survey found that 50% of centers reported using anticoagulant prophylaxis after major orthopedic surgery [31]. Zakarija and Aledort reported that in 19 adult centers in the USA, 47% used postoperative thromboprophylaxis with either LMWH or fondaparinux [32]. Pradhan et al. surveyed 60 hemophilia centers in the USA and found that 67% of centers determined that hip and knee arthroplasty in persons with hemophilia warranted the use of thromboprophylaxis; of these, 55% reported that they provided such treatment [33].

Venous thromboembolic disease in patients with haemophilia

Cedric Hermans *

Division of Haematology, Haemostasis and Thrombosis Unit, Cliniques universitaires Saint-Luc, Université catholique de Louvain, Brussels,

Thrombosis Research 130 (2012) S50–S52

Conclusions

The limited published literature suggests that VTE, although uncommon, can develop in persons with hemophilia who undergo major orthopedic surgery. There is an urgent need for research into this area given that intensive factor replacement therapy has made joint surgery in this patient population both feasible and increasingly common. Indeed, although most procedures have so far been performed in relatively young patients, more older individuals with haemophilic arthropathy will require orthopedic surgery in the future and an increased proportion of haemophilic patients will also live long enough to need revision surgery. In this context, further studies

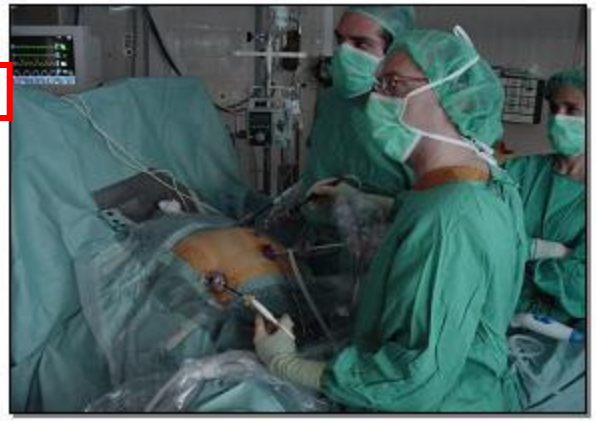
LAPAROSCOPIC SURGERY IN PATIENTS WITH HAEMOPHILIA

Altisent C[1], Olsina J[2], Barrenetxea C[1], Balsells J[2], Armengol M[2], Parra R[1]

[1] Unitat D'Hemofilia. [2] Departament de Cirurgia, Hospital Vall d'Hebron, Barcelona, Spain

BACKGROUND

In the last fifteen years laparoscopic surgery has been one of the most important surgical advances. However, the indication in patients with haemostatic disorders is hampered due to being considered a risk group.



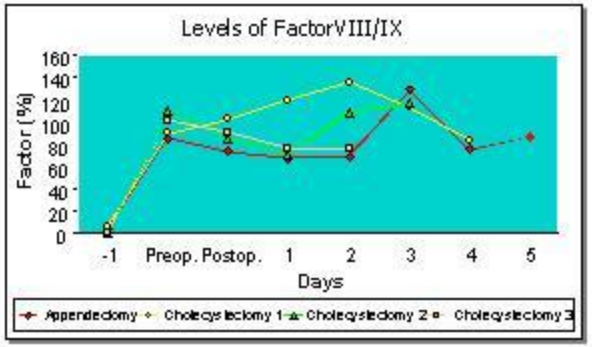
MATERIAL AND METHODS

Three cholecystectomies (severe haemophilia A and B, and mild haemophilia A) and one appendectomy (moderate haemophilia A) were performed in our hospital. All these patients received replacement therapy with an initial bolus followed by continuous infusion to maintain factor VIII or IX plasma levels over 80% for the first 48 hours.

RESULTS

Year	Surgical intervention	Haemophilia	[Factor] (%)	Age (years)
1993	Appendectomy	A*	5	13
1993	Cholecystectomy 1	A	6	65
1997	Cholecystectomy 2	B**	<1	34
2002	Cholecystectomy 3	A**	<1	28

*HCV infection
**HIV and HCV infection



The application of laparoscopic procedures in haemophilic patients showed no additional complications compared to the general population. In the patient undergoing appendectomy, an umbilical haematoma was observed in the first 24 postoperative hours, despite his having a factor VIII blood level around 70%. This haematoma resolved with an extra bolus of factor VIII and local cold. In another patient, local phlebitis was observed at the site of continuous infusion 48 hours after the beginning of the treatment with a product of intermediate purity. Hospital discharge was on the second day in the case of cholecystectomy 3 and before the fifth day in all cases.

CONCLUSION

With experienced laparoscopic surgeons and with the correct replacement therapy, the laparoscopic cholecystectomy procedure represents less aggressive surgery, and could be a good choice for haemophilic patients.

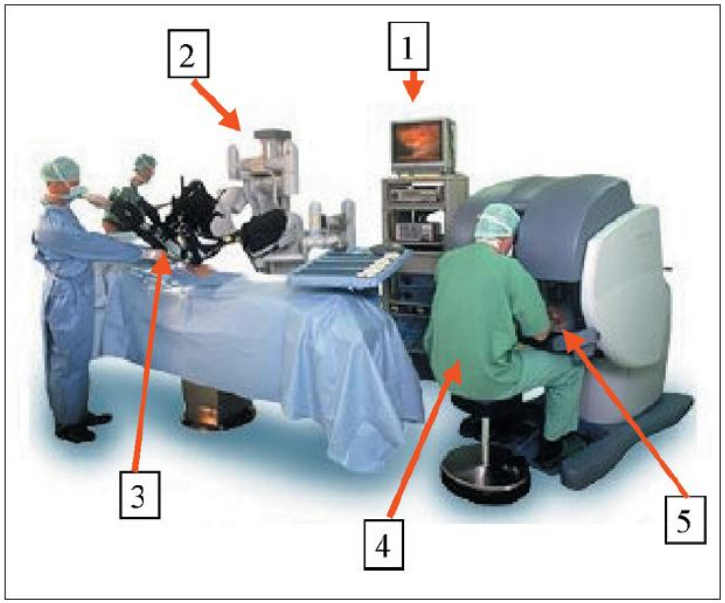


FIGURA 4: Da Vinci® Surgical System

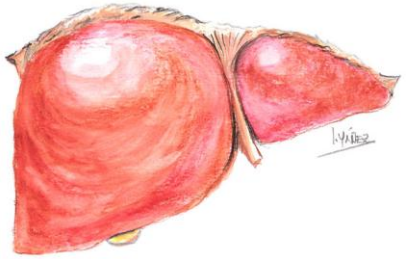
JSLS (2010)14:439–441

CASE REPORT

JSLS

Robotic Prostatectomy in a Patient with Hemophilia

Hugh J. Lavery, MD, Prathibha Senaratne, Daniel M. Gainsburg, MD, David B. Samadi, MD



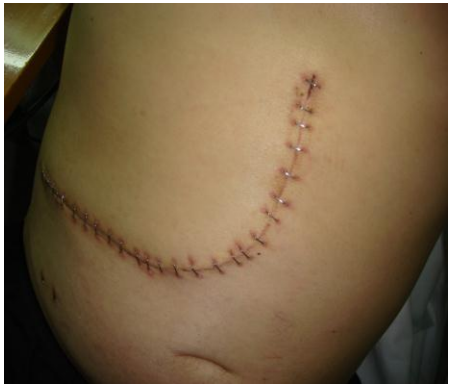
Cirugía mayor

OUTCOME OF LIVER TRANSPLANTATION FOR HEPATITIS C IN HAEMOPHILIC PATIENTS CO-INFECTED WITH HIV

Altisent C*, Sapisochin G, Bilbao I, Castells L, Dopazo C, Escartín A, Lázaro JL, Balsells J, Parra R*, Charco R.
*Liver Transplantation Unit. *Haemophilia Unit. Hospital Universitari Vall d´Hebron. Barcelona. Spain*

Conclusions

- **FVIII levels rose to normal values 42h post-transplant.**
- **Haemophilic patients with HCV and HIV and end-stage liver disease can be safely transplanted with no more morbidity and mortality than those without clotting factor disorders.**
- **In HIV/HCV co-infected patients, more effective antiviral therapy against HCV is required to improve prognosis.**



Conclusiones

- Pueden efectuarse intervenciones quirúrgicas si se dispone de:
  - ✓un equipo experimentado
  - ✓tratamiento sustitutivo apropiado

- Son necesarios estudios que permitan optimizar el elevado coste del tratamiento sustitutivo
- No existe consenso en la profilaxis tromboembolica