TOTAL KNEE AND HIP REPLACEMENT IN PATIENTS WITH HEMOPHILIA AND OTHER BLEEDING DISORDERS

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OBJECTIVE

Success of total knee/hip replacement (TKR/THR) in pts with hemophilia and related bleeding disorders depends on:

- ❑ Meticulous preoperative preparation
- ❑ Surgeon´s skillness and knowledge of the specifics of the bleeding disorders
- ❑ Comprehensive hemostatic management

We report on 58 joint replacements performed at our Hemophilia Center in a period 1993- 2013

Patients

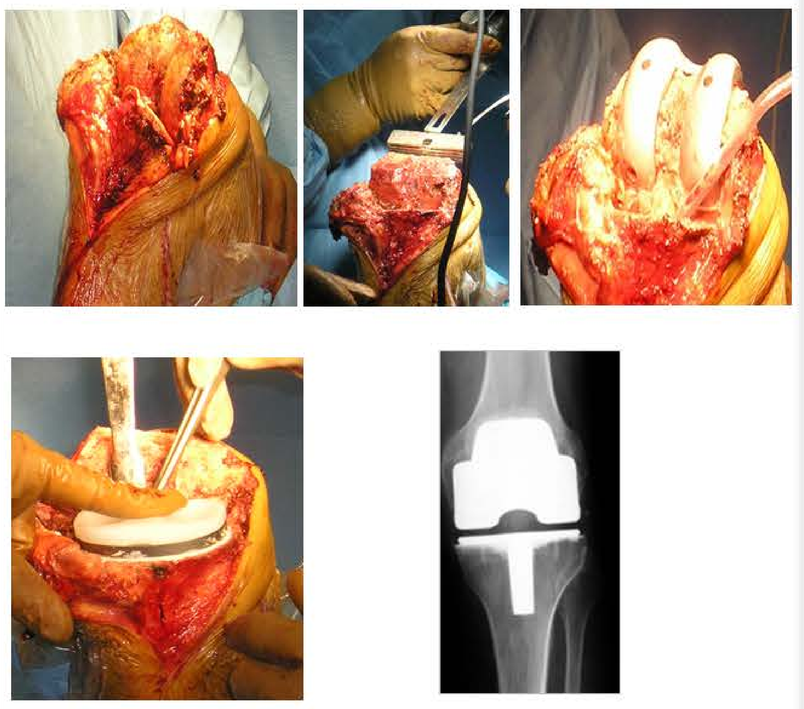
A total of 24 TKR and 34 THR were performed in 29 pts with severe hemophilia A/B, 7 pts with congenital FVII deficiency and 5 pts with v.Willebrand disease.

Pre-operative work up

- Systematic follow up by ortopedist
- Surgery indication = ortopedist /hematologist
- Pre-OP physiotherapy
- Bacteriological investigation
- Infection focuses treatment/ removal
- Pain specialist consultation
- General medical preoperative investigation

- ❑ Pre-OP investigation in the HCCC:
  - Exclusion of inhibitor
  - I.iv. recovery /response ± pharmacokinetics
- ❑ Hemophilia treater must ensure:
  - Sufficient stock of concentrates
  - Lab monitoring availability nonstop 24h
  - Hemotherapy – RBC, PCC, Platelets
  - Algorithm for factor replacement therapy

Fig 1. Severe hemophilia A: total knee replacement



RESULTS

Tab 1 Patients characteristics

	n joints / n pts
N joint replacements / n pts	58 / 41
Hemophilia A	38 / 27
Hemophilia B	2 / 2
vWillebrand disease (vWD)	5 / 5
Congenital FVII deficiency	13 /7
Median age at joint replacement (yr)	50 (30 – 60)
Follow up > 2 yrs	50 / 33

Tab 2 Number of joint replacements according to the bleeding disorder

Bleeding disorder	Total knee replacement (n)	Total hip replacement (n)	All (n)
Hemophilia A	20	18	38
Hemophilia B	1	1	2
FVII deficiency	2	11	13
vWD	1	4	5
ALL (n)	24	34	58

Tab 3 THR/THR- perioperative blood loss and replacement therapy for surgery and physiotherapy

	Hemophilia A/B (n=38)	vWD (n=5)	FVII deficiency (n=12)
TKR/THR	20/18	1/4	2/11
Blood loss	600 (350-1400)	300 (250-700)	600 (350-1600)
No of RBC*	1 (0-9)	0 (0-3)	0 (0-4)
Factor replacement (days)*	12 (11-15)	10 (10-12)	7 (5-11)
Factor consumption(IU/kg)*	630 (509-1900)	308 (180-600)	177 (71-402)
Factor replacement for physiotherapy (days)*	21 (14- 22)	7 (4- 12)	4 (4-10)
Factor consumption for physiotherapy (IU/kg)*	359 (204- 590)	230 (120 – 300)	80 (53- 110)
Thromboprophylaxis (n)	2/38	1/5	0/11

* values in medians and range

Tab 4 Replacement therapy for THR/TKR

	joints (n)	Factor concentrate	Bolus injections therapy (n)	Continuous infusion (n)
Hemophilia A	38	pdFVIII, rFVIII	20	18
Hemophilia B	2	pdFIX	2	-
vWD	5	vWF/FVIII	4	1
FVII deficiency	9	pdFVII	9	-
FVII deficiency	3	rFVIIa	1	2

Tab 5 Early and late complications of TKR/THR (n=58)

Early complications	n	Postop day
Muscle hematoma	3	D 1-2
Intraarticular bleeding after TKR	1	D15
FVIII inhibitor	2	D 9-12
Thromboembolic complications	0	
Late complications	**n**	**Follow up**
Infection	0	
Bleeding into the target joint	1	6 mths
Aseptic loosening	2	THR - 6 yrs; THR - 7 yrs
Revision surgery	2	6 yrs, 7 yrs

Tab 6 Function improvement after total knee replacement (n=24)

Function	Pre-operatively	3 mths Post-OP	Long term Follow up	P
Deficit of extension	21.5 ± 6.6º	3.8 ± 5.5º		<0.001
Flexion	80.3 ± 34.8º	90.0 ± 20.0º		NS
ROM- Range of motion	49.5± 23.8º		88.0 ± 15.6º	<0.02

Tab.7 Patient´s satisfaction

Patient´s satisfaction	THR/TKR (n=58)
Disappearance/reduction of pain	58 (100%)
Imrovement of ROM	49 (86%)
Satisfaction with surgery	56 (97%)
Improvement of quality of life	58 (100%)

CONCLUSIONS

- Our results demonstrate that joint replacement is safe and effective procedure in hemophilia and related bleeding disorders if performed by highly experienced surgeon in conditions of a good cooperation with a team of Comprehensive Hemophilia Centre.
- In our patient series the proportion of early / late complications of total joints replacement was very low.

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