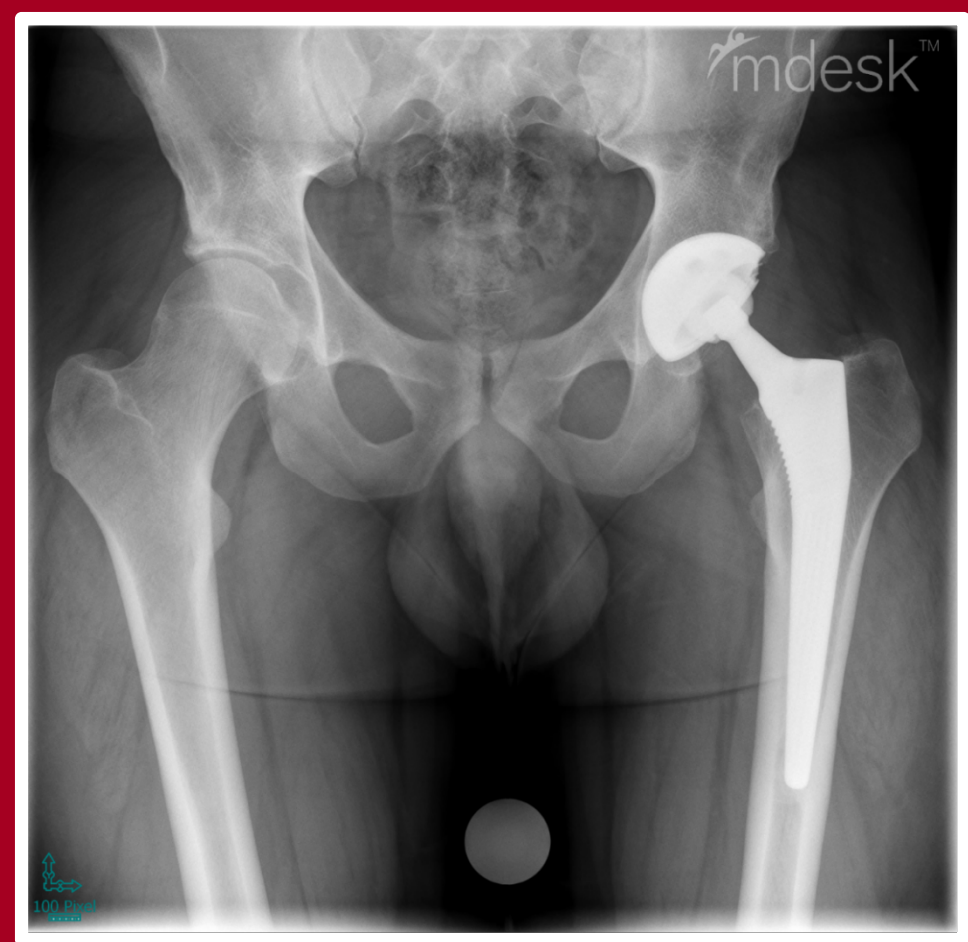




Long time outcome of total hip replacement in teenage patients with systemic inflammatory diseases

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Background

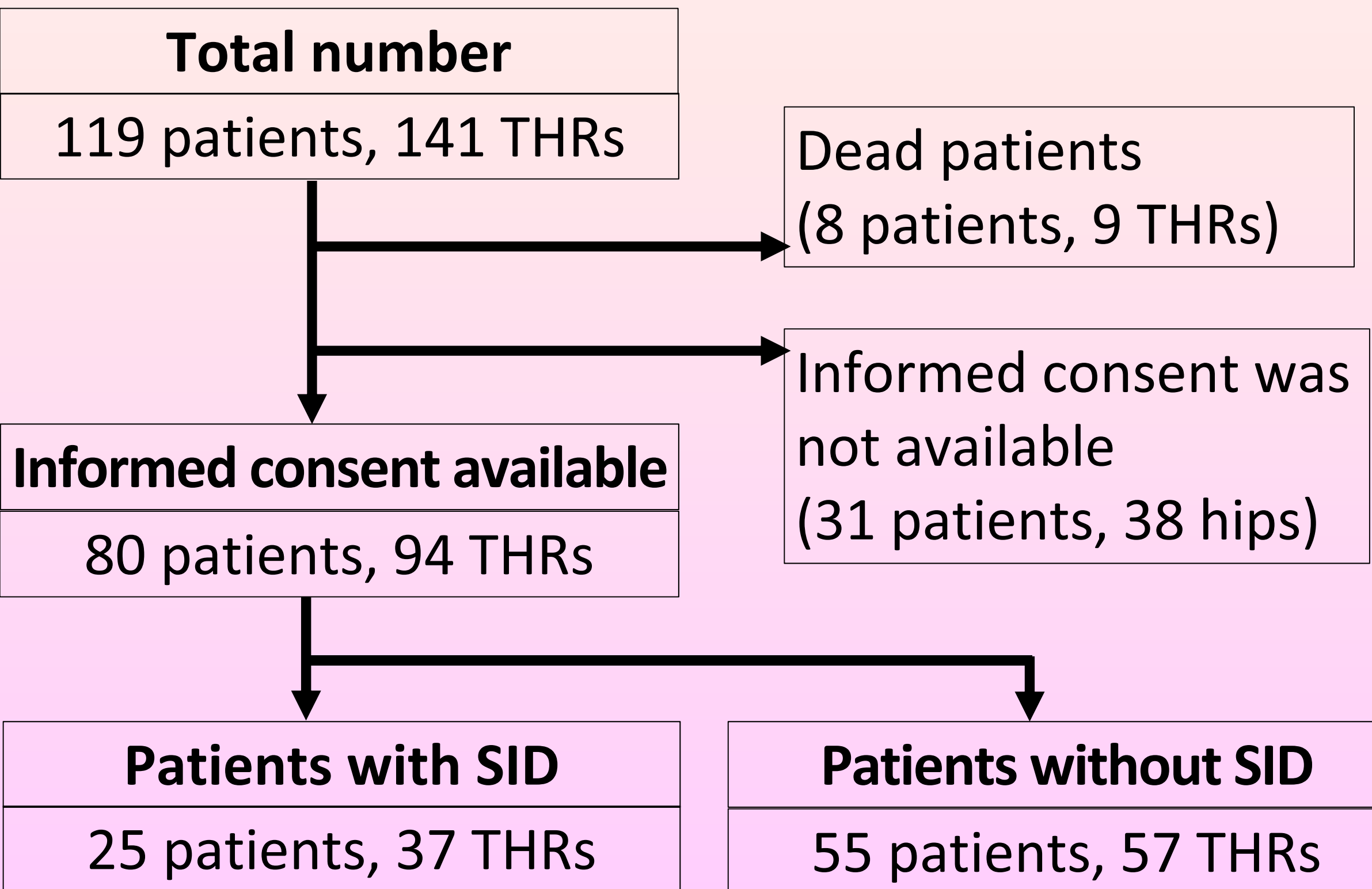
Total hip replacement (THR) is the most effective treatment for the progressed hip arthrosis. However, indication of THR for teenage patients is controversial because they might need several revisions in their lives, and the complication rate in revision surgery is high in systemic inflammatory patients (SID) [1]. However, alleviation of hip pain and improvement of function through THR might have substantial benefits on the physical, psychological and social development of these teenage patients. When considering THR for teenage patients with SID, it is highly important to discuss the potential risks and benefits. However, there are currently only a few reports on THR for this group of patients [2] [3].

Patients and Methods

Database: Norwegian Arthroplasty Register
Inclusion: Primary THR under 20 years of age
Periods: 1987 – 2010
Follow-up: 1987 – 2013 (minimum 3 years follow-up)
Data collection: Register data (Diagnosis and revisions*), Radiographs, Medical records, Direct interview by one of the author (VH).

*: Change of cups or stems or liners.

Patient inclusion



Results - Implant

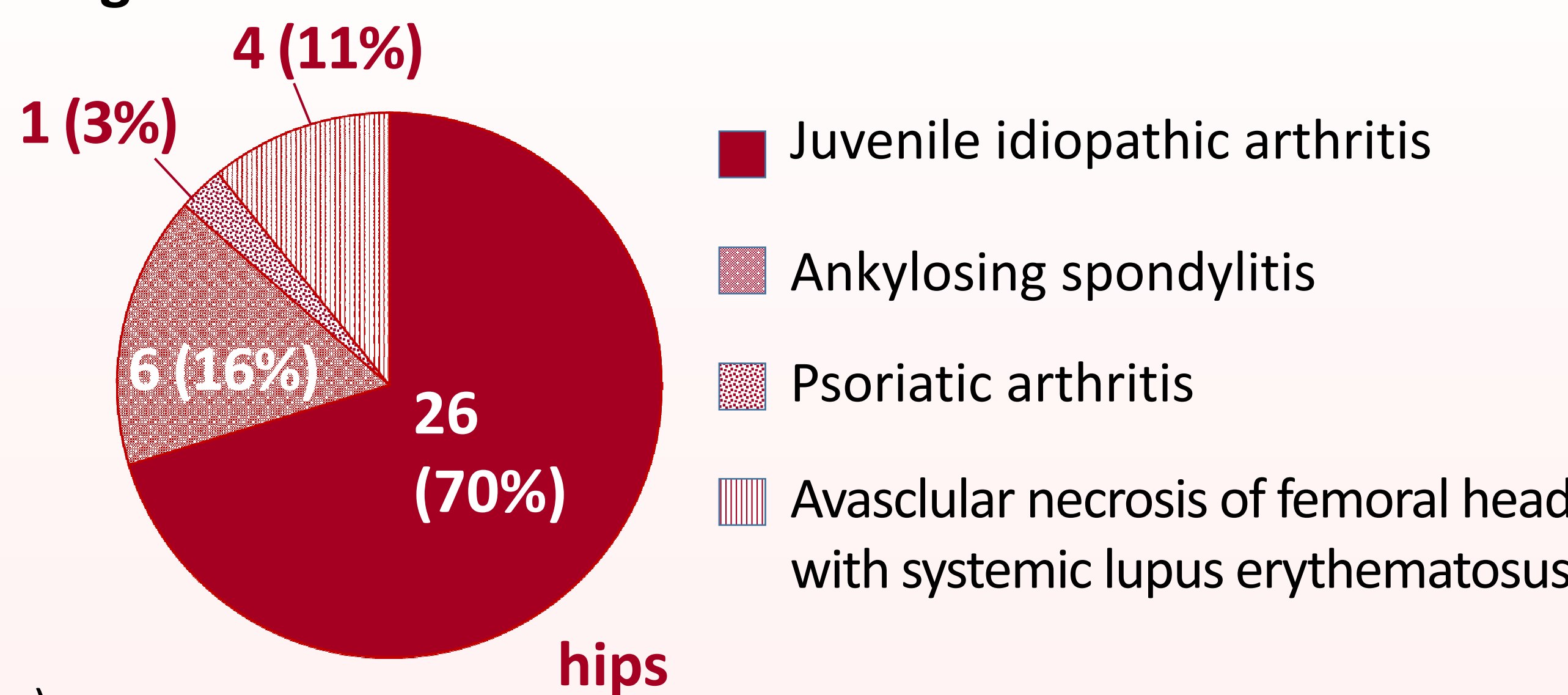
1: Patient demographics

Overview

	Study group	Control group
Male (%)	32%	40%
Age at THR	17.1 ± 2.2 (11.2-19.9)	17.0 ± 2.0 (13.1-19.9)
Onset of SID	7.4 ± 5.5 (0-17)	—
Follow-up years	15.1 ± 7.3 (3.1 – 26.1)	12.6 ± 7.4 (3.8 – 26.3)

Mean ± SD (range)

Diagnosis

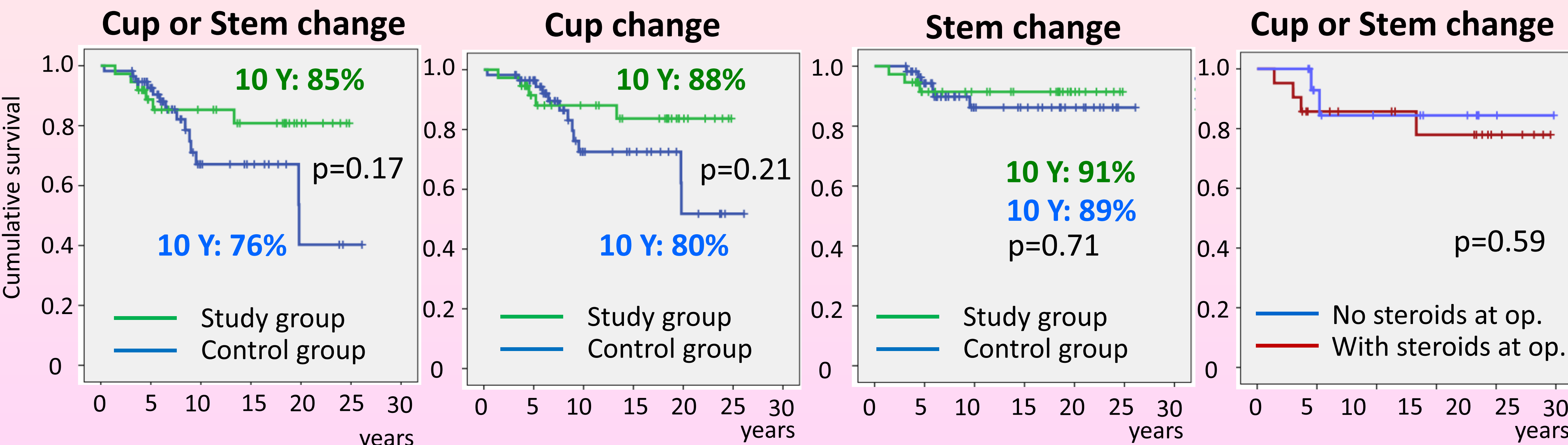


Medication (Pre-op)

Operation	MTX	Steroids	DMARDs	Biologics	Biologics (Final)	Hip
1999 and before (21 hips)	43% 7.9 ± 3.2, (2.5-12.5) mg	33% 8.4 ± 3.7 mg	81%	0%	43%	Remicade 2 Enbrel 4 RoActemra 2
2000 and after (16 hips)	31% 13 ± 6.8, (5.0-20) mg	56% 6.1 ± 1.3 mg	75%	56%	56%	Humira 1

Type of biologics (Pre-op)

2: Primary implant survival



Revision number

	Total (%)	Steroids* (+)	Steroids* (-)	Biologics** (+)	Biologics** (-)
Hip number	37	16	21	18	19
Cup revision	5 (14%)	2	3	0	5
Stem revision	3 (8%)	1	2	0	3

*: At operation, **: At final visit, ***: In pictures later than 2010.

3: Bone stock***

	Cup (%)	Stem(%)
Osteolysis	9 (24%)	8 (30%)
Paprosky classification		
1	29 (83%)	1
2A	4 (11%)	28 (82%)
2B	1 (3%)	2
2C	0 (0%)	4 (12%)
3A	1 (3%)	3A
		2 (6%)

Results -Interview

3: Harris Hip Score

	Mean ± SD
Pain	41 ± 9.3
Total	84 ± 16

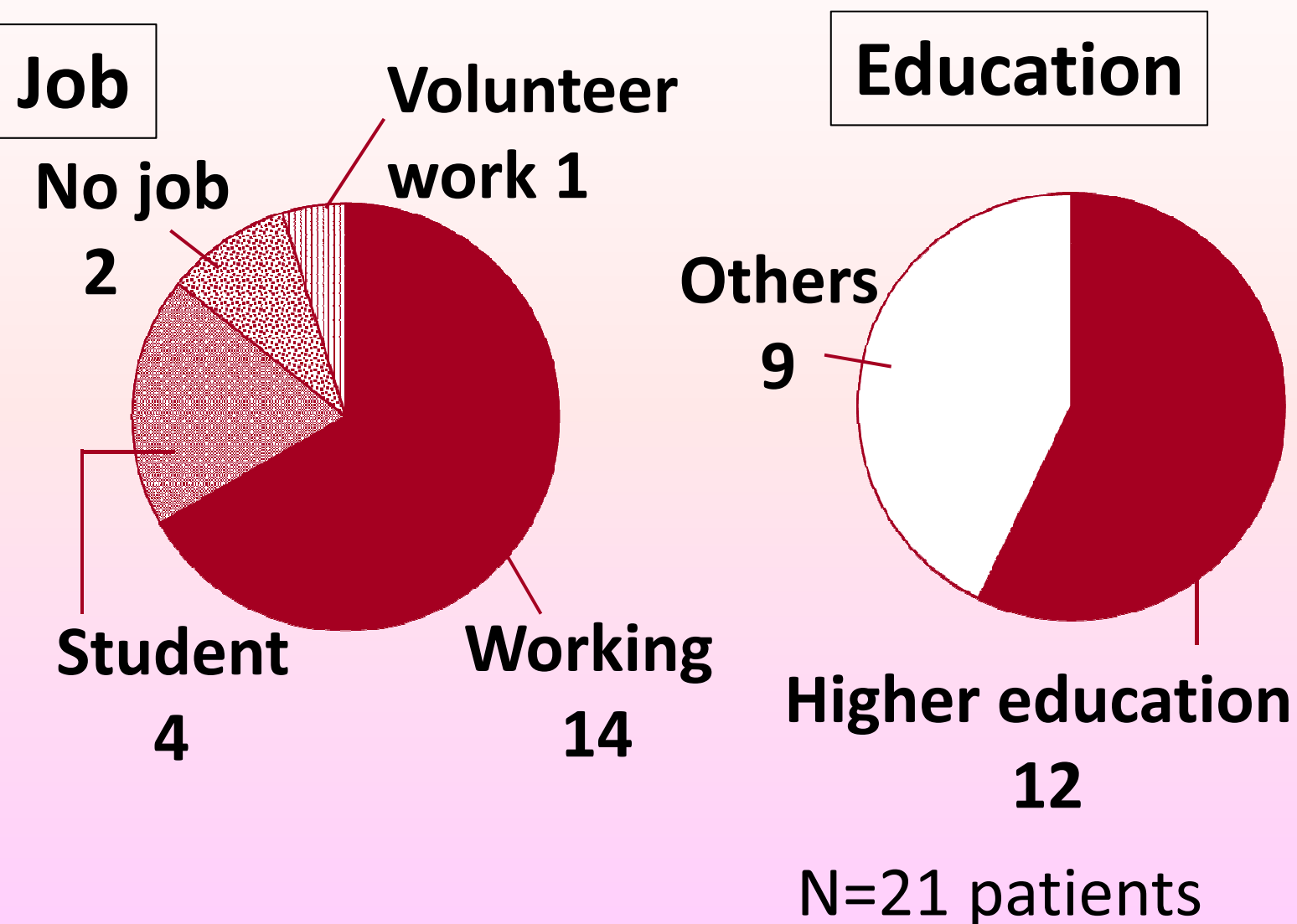
N=16 patients

4: Walking aids

	No. Patient
Crutch	1
Wheelchair	2

N=16 patients

5: Social status



Discussion

Implant survival

- Implant survival were not inferior to non-SID patients.
- It could be because of the lower activity of SID patients and the less polyethylene wear.

Effects of medications

- No implant has revised under biologics.
- Steroid usage at operation did not influence the survival.
- Control of disease activity may be important for the implant survival.

Bone stock

- Reduced bone stock will be a problem in future revisions.

Social status

- Hip function and social status were favorable.

Conclusion

1. The hip function and implant survival were promising.
2. Steroids and biologics did not impair implant survival.

Reference

1. Goodman SB, Hwang K, Imrie S. High complication rate in revision total hip arthroplasty in juvenile idiopathic arthritis. Clin Orthop Relat Res. 2014 Feb;472(2):637-44.
2. Wroblewski BM, Purbach B, Siney PD, Fleming PA. Charnley low-friction arthroplasty in teenage patients: the ultimate challenge. J Bone Joint Surg Br. 2010 Apr;92(4):486-8.
3. Bessette BJ, Fassier F, Tanzer M, Brooks CE. Total hip arthroplasty in patients younger than 21 years: a minimum, 10-year follow-up. Can J Surg. 2003 Aug;46(4):257-62.