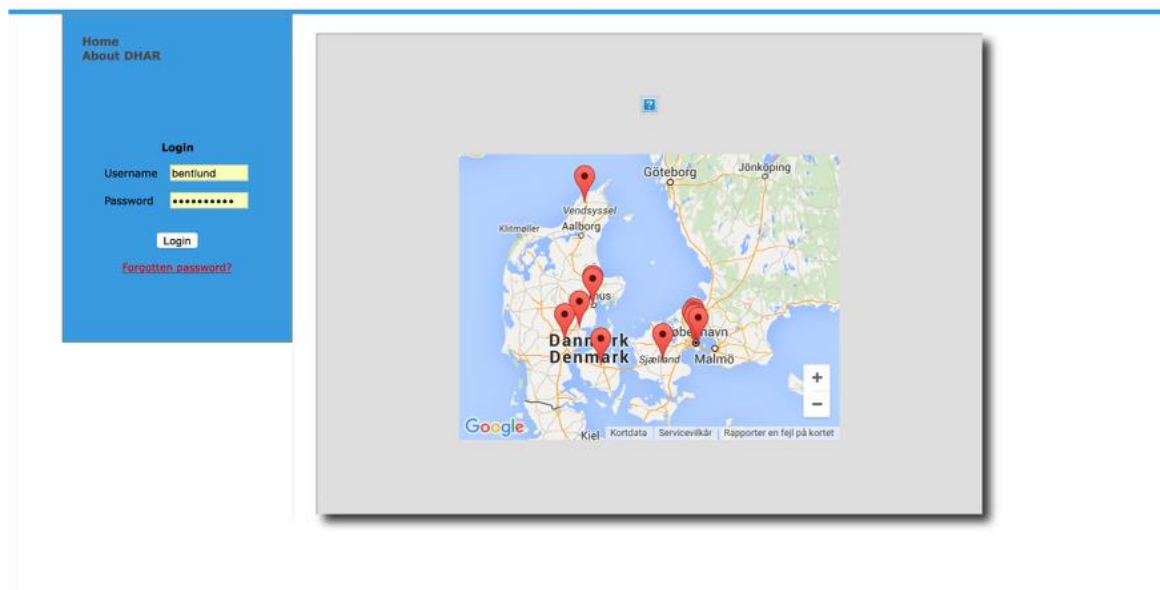


The Danish Hip Arthroscopy Registry DHAR

Annual report 2018

Danish Hip Arthroscopy Register



Steering committee:

Bent Lund, Horsens Regional Hospital, chairman

Otto Kraemer, Hvidovre Hospital

Per Hölmich, Hvidovre Hospital

Niels Maagaard, Odense University Hospital

Søren Winge, CFR hospital

Bjarne Mygind-Klavsen, Aarhus University Hospital

Introduction

Hip arthroscopies have since 2010 only been performed at a limited number of hospitals with specific levels of expertise in Denmark. This was based on a new Health law regulating various treatments. Furthermore, it was demanded that the hospitals and clinics registered the procedures they performed. This gave the inspiration for a national hip arthroscopy registry. The Danish Hip Arthroscopy Registry (DHAR) was initiated in 2012 and the development was funded by a grant from The Danish Society for Arthroscopy and Sportstraumatology (SAKS). The DHAR and the British Non-Arthroplasty Hip Registry (NAHR) are the only national non-arthroplasty hip registries existing so far.

DHAR has been open to submissions on-line since the beginning of 2012 and the database structure has been modified several times over the years. Mainly because minor flaws and programming errors had to be adjusted and corrected. The Steering Committee meets twice a year and ad-hoc decisions and data requests are handled pr. e-mail og Skype meetings.

In 2016 the first full Annual report was published and over the coming years we will publish the reports based on this year's publication. Peer reviewed articles based on data from the Registry will also be published and in fact several have already been published. See publication list [1–5].

DHAR is run by a voluntary effort among the participating surgeons and the actual database is run by Procordo Inc., a Danish software company hosting a variety of orthopedic registries.

Bent Lund

Chairman of the Steering Committee.

DHAR

The Registry is built around a flowchart, that forms the basic structure and makes it possible to access the various parts of the Registry in the flowchart.



The patients access the Registry through a “kiosk”, where they can enter their data on-line and fill out the pre-scores in the Patient Related Outcome Measures (PROM). At the time of surgery, the surgeon enters the operative findings and other variables on-line.

When the patients are signed up for hip arthroscopy, they enter the following Patient Related Outcome Measures (PROM) into the registry; VAS, NRS-rest and NRS-walk, iHOT₁₂, HAGOS, EQ5D and HSAS score.

The surgeons enter the following data in the registry at the time of surgery; various radiographic measurements, previous surgery, anesthesia, antibiotics, DVT-prophylaxis, labral tear, cartilage lesions, other injuries, OR-time, traction time, surgical procedures, number of anchors and type, cartilage treatment, bony work, extraarticular surgery and perioperative complications.

The Registry has an automatic follow-up and the patients get an e-mail at 1, 2, 5 and 10 years with a link to an on-line questionnaire. If they don't respond another e-mail is automatically sent as a reminder.

The registry makes it possible to extract data on the actual patient, but also, on groups of patients or different treatment modalities or types of injuries. All surgeons have access to their own data, but only the steering committee can gain full access. The database is secure and not open to public access. Data can only be made available on written request and with a research protocol stating the type of request. Permission has to be granted by the Danish Data Protection Agency.

General data

At the end of 2018 the registry had a total of **5332 arthroscopic hip surgeries** registered in DHAR. The data presented in this annual report is a summation of all the registrations since the beginning of 2012 until Dec. 31st, 2017. There are in total **5332 procedures** and **2930 Pre-PRO datasets** from patients.

There are **11** hospitals and clinics, that have a Regional Function (®) in hip arthroscopy. There are also 3 private clinics operating only on private insurance patients that contribute to the registry. In total **14** hospitals and clinics have reported to the DHAR.

Year	2012-2015	2016	2017	2018	Total
North Region					
Hjørring Regionshospital ®	137	78	90	140	445
Mid Region					
Aarhus Universitetshospital ®	239	32	54	34	359
Aleris Hamlet Aarhus ®	485	73	0	0	558
Horsens Regionshospital ®	637	169	188	186	1180
CAPIO Aarhus	0	2	3	3	8
South Region					
Odense Universitetshospital OUH ®	310	98	80	63	551
Privathospitalet Mølholm	76	31	49	38	194
Capital Region					
Aleris Hamlet København ®	58	65	124	134	381
AHH Amager Hvidovre Hospital ®	223	57	62	62	404
Bispebjerg Hospital ®	110	38	31	58	237
CFR Privathospitaler ®	396	105	95	89	685
Gildhøj Privathospital	22	30	5	21	78
Parkens Privathospital ®	211	32	0	0	243
Total # procedures	2913	810	781	828	5332

Note: Not all clinics have reported from the start. This was primarily due to log-in problems.

Quality indicators

Completeness (surgeon) DHAR/LPR (Danish National Patients Registry)

Target 90 %

Number of Hip Arthroscopic procedures reported in DHAR and LPR

Completeness	2012	2013	2014	2015	2016	2017	2018*
DHAR	450	709	936	921	803	757	505
National Patient Registry (LPR)	576	827	1201	1042	826	880	571
DHAR/LPR (%)	78.1	85.7	77.9	88.4	97.2	86.0	88.4

*Data included up to September 2018. Due to procedural changes accessing data from the National Patient Registries, data are not available from September 2018 - December 2018

Completeness PROMS/DHAR

Target 70 %

Completeness PROMS (n (%))	2012-2015	2016	2017	2018	Total
Pre	1601 (55)	349 (43)	392 (50)	583(70)	2930 (55)
1 year	1587 (54)	455 (56)	387 (50)	-	2529 (56)
2 years	1337 (46)	320(40)	-	-	1740 (47)
5 years	383 (35)	-	-	-	383 (35)

QOL improvement > 25 points at 1, 2 and 5 years (number %)

Target 70 %

HAGOS QOL (n (%))	2012-2015	2016	2017	2018	Total
1 year	425 (44)	105 (47)	101 (43)	-	669 (44)
2 years	391 (49)	90 (56)	-	-	503 (50)
5 years	127 (61)	-	-	-	130 (62)

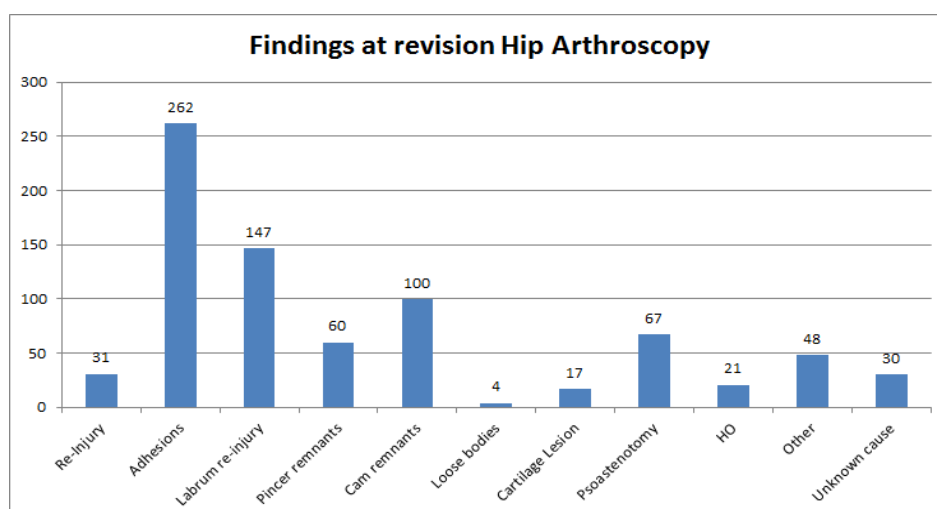
Revisions (arthroscopy) %

Target < 5 % (1 year)

Revisions performed that year	2012-2015	2016	2017	2018	Total
Revisions pr. year (n (%))	343 (12)	85 (10)	108 (14)	99 (12)	635 (12)

Comments: The number of revision arthroscopies are presented with the number performed that year. There are no information's on the year of the index arthroscopy.

Findings at revision Hip Arthroscopy



Overall data

Demographics	2012-2015	2016	2017	2018	Total
Male	1258	337	324	339	2258
Female	1655	473	457	490	3075
Ratio (m/f)	43/57	42/58	41/59	41/59	42/58
Mean age (year)	37.5	37.8	38.0	37.7	37.7

Previous surgery

Of the **5333** procedures **1117 had** had previous surgery in the affected hip. Among these were 318 patients, which had had a PAO due to congenital dysplasia of the hip. Finally, 37 patients had a previous THR.

Previous surgery (n)	2012-2015	2016	2017	2018	Total
Labral tear	14	2	9	3	28
Cam deformity	58	12	18	18	106
Pincer deformity	117	31	38	35	221
Cartilage damage	149	42	44	40	275
Loose bodies /chondromatosis	6	1	1	3	11
Ligamentum teres rupture	3	0	1	1	5
Infection	0	1	0	0	1
Periacetabular osteotomy (PAO)	202	34	47	35	318
Other	31	4	4	0	39
THR	21	5	7	4	37
Osteosynthesis of SCFE	15	3	4	4	26
Z-plasty ITB	10	3	4	3	20
Open hip surgery	17	7	4	2	30
Total	643	145	181	148	1117

OR time

OR time	2012-2015	2016	2017	2018	Mean
Total OR-time (min)	84	73	71	66	78
Total traction time (min)	48	41	41	42	45

Radiology

Radiology	2012-2015	2016	2017	2018	Total
LCE-angle (mean)	32	31	31	30	31
Alpha-angle (mean)	68	68	66	64	67
Tönnis AI-angle (mean)	6.2	4.9	4.7	4.9	5.5
Ischial spine sign (%-patients)	900 (31)	198 (24)	153 (20)	148 (18)	1399 (26)
Joint Space Width (n (%))					
<2 mm.	24 (1)	4 (0)	2 (0)	5 (0)	34 (1)
2,1-3,0 mm.	143 (5)	42 (5)	17 (2)	21 (3)	223 (4)
3,1-4,0 mm.	978 (34)	206 (26)	219 (28)	253(31)	1656 (31)
>4 mm.	1768 (60)	558 (69)	543 (70)	547 (66)	3416 (64)

Bony work

Bony work (n (%))	2012-2015	2016	2017	2018	Total
Isolated femoroplasty	467 (17)	186 (25)	184 (25)	164 (21)	1001 (20)
Isolated rimtrimming	227 (8)	75 (10)	102 (14)	140 (18)	544(11)
Comb. femoroplasty-rimtrimming	2021 (75)	483 (65)	442 (61)	471 (61)	3417 (69)

Labral surgery

Labral tear (n (%))	2012-2015	2016	2017	2018	Total
Yes	2550 (88)	694 (86)	670(86)	745 (90)	4659 (87)
No	363 (12)	116 (14)	111 (14)	84 (10)	674 (13)
Type of surgery (n (%))	2012-2014	2016	2017	2018	Total
Labrum untouched (no treatment)	4 (0)	1 (0)	2 (0)	1 (0)	8 (0)
Labrum remodelling/ partial resection	289 (11)	106 (16)	80 (12)	86 (12)	561 (12)
Labral full thickness resection	126 (5)	30 (4)	34 (5)	41 (6)	231 (5)
Labral repair	2040 (83)	531 (79)	532 (81)	603 (82)	3706 (82)
Labral reconstruction	16 (1)	1 (0)	3 (0)	2 (0)	22 (1)
Unknown	75 (3)	25 (4)	19 (3)	12 (2)	131 (3)

Grading of cartilage damage

Cartilage lesion Acetabulum (n (%))	2012-2015	2016	2017	2018	Total
Becks Gr. 0 - Healthy	44 (2)	15 (2)	19 (3)	12 (2)	90 (2)
Becks Gr. 1 - Fibrillation	423 (16)	92 (14)	95 (15)	93 (13)	707 (15)
Becks Gr. 2 - Wave sign	1068 (42)	250 (38)	274 (42)	361 (50)	1953 (43)
Becks Gr. 3 - Delamination	731 (29)	214 (33)	195 (30)	182 (26)	1322 (29)
Becks Gr. 4 - Exposed bone	284 (11)	87 (13)	63 (10)	67 (9)	502 (11)

Becks lesion size (n (%))	2012-2015	2016	2017	2018	Total
0	53 (2)	18 (3)	21 (3)	12 (2)	104 (2)
Size < 1 cm ²	730 (29)	212 (32)	273 (42)	264 (37)	1479 (32)
Size 1-2 cm ²	1365 (53)	351 (53)	276 (43)	351 (49)	2343 (52)
Size > 2 cm ²	402 (16)	77 (12)	77 (12)	92 (13)	648 (14)

Cartilage lesion Head (n (%))	2012-2015	2016	2017	2018	Total
ICRS Gr. 0 - Normal	1799 (71)	491 (75)	454 (70)	484 (68)	3228 (71)
ICRS Gr. 1 - Almost normal	231 (9)	50 (8)	47 (7)	59 (8)	387 (8)
ICRS Gr. 2 - Abnormal	340 (13)	62 (9)	86 (13)	107 (15)	595 (13)
ICRS Gr. 3 - Severely Abnormal	115 (4)	40 (6)	37 (6)	52 (7)	244 (5)
ICRS Gr. 4 - Exposed bone	65 (3)	15 (2)	23 (4)	17 (2)	120 (3)

ICRS lesion size (n (%))	2012-2015	2016	2017	2018	Total
0	1816 (72)	495 (75)	456 (71)	485 (68)	3253 (71)
Size < 1 cm ²	233 (9)	53 (8)	54 (8)	73 (10)	413 (9)
Size 1-2 cm ²	266 (10)	82 (13)	87 (13)	108 (15)	543 (12)
Size > 2 cm ²	235 (9)	27 (4)	50 (8)	53 (7)	365 (8)

Cartilage surgery

Type of cartilage surgery	2012-2015	2016	2017	2018	Total
Cartilage-resection on head	126 (4)	21 (3)	26 (3)	17 (2)	190 (4)
Cartilage-resection in acetabulum	1145 (39)	211 (26)	181 (24)	151 (19)	1688 (32)
Microfracture on head	10 (0)	1 (0)	4 (1)	1 (0)	16 (0)
Microfracture in acetabulum	136 (5)	28 (3)	23 (3)	32 (4)	219 (4)
Cartilage-refixation on head	2 (0)	0 (0)	0 (0)	0 (0)	2 (0)
Cartilage-refixation in acetabulum	13 (0)	1 (0)	0 (0)	2 (0)	16 (0)
Debridement with RF-wand	1069 (37)	501 (62)	504 (65)	555 (69)	2646 (50)
Other	58 (2)	17 (2)	1 (0)	0 (0)	76 (1)

Most patients have had a combination of treatments.

Extraarticular surgery

Type of extraart. surg. (n (%))	2012-2015	2016	2017	2018	Total
Partial AIIS resection	26 (1)	24 (3)	9 (1)	8 (1)	67 (1)
Psoas synovectomy	11 (0)	0 (0)	1 (0)	0 (0)	12 (0)
Psoas-tenotomy	211 (7)	30 (4)	26 (3)	26 (2)	293 (5)
Reinsertion of gluteus medius	4 (0)	1 (0)	0 (0)	2 (0)	7 (0)
Z-plasty ITB	12 (0)	3 (0)	3 (0)	1 (0)	19 (0)
Resection of trochanteric bursa	21 (1)	6 (1)	4 (1)	4 (0)	35 (1)
Capsular closure	288 (10)	135 (17)	308 (39)	331 (40)	1062 (20)
Remo. of hardware (AO-screws)	31 (1)	4 (0)	6 (1)	10 (1)	51 (1)
Removal of heterotop. ossification	29 (1)	6 (1)	10 (1)	3 (0)	48 (1)
Osteosynthesis of os acetabuli	1 (0)	0 (0)	0 (0)	1 (0)	2 (0)
Removal of os acetabuli	20 (1)	5 (1)	9 (1)	9 (1)	43 (1)
Inforation of bone cyst	10 (0)	0 (0)	0 (0)	5 (1)	15 (0)
Other	41 (1)	15 (1)	6 (1)	5 (1)	67 (1)
Total	705 (23)	229 (27)	382 (48)	405 (48)	1721 (31)

Antibiotics prophylaxis and DVT prophylaxis

Antibiotics (n (%))	2012-2015	2016	2017	2018	Total
Dicloxacillin	813 (28)	325 (40)	294 (38)	357 (43)	1789 (33)
Cefuroxim	1985 (68)	417 (51)	456 (58)	462 (56)	3320 (67)
Total	2798 (96)	742 (92)	750 (96)	819 (99)	5109 (96)
DVT Prophylaxis (n (%))	2012-2015	2016	2017	2018	Total
Dalteparin (Fragmin)	48 (2)	1 (0)	6 (1)	3 (0)	58 (1)
Fondaparinux (Arixtra)	1 (0)	0 (0)	0 (0)	0 (0)	1 (0)
Tinzaparin (Innohep)	185 (6)	2 (0)	1 (0)	0 (0)	188 (4)
Rivaroxaban (Xarelto)	549 (19)	126 (16)	21 (3)	54 (7)	750 (14)
Total	783 (27)	129 (16)	28 (4)	57 (4)	997 (19)

Types of complications at OR

Types of complications (n (%))	2012-2015	2016	2017	2018	Total
Labral penetration	8 (0)	1 (0)	2 (0)	0 (0)	11 (0)
Labrum cut	38 (1)	6 (1)	10 (1)	6 (1)	60 (1)
Anchor pull-out	66 (2)	17 (2)	10 (1)	7 (1)	100 (2)
Anchor penetration acetabular surface	20 (1)	11 (1)	10 (1)	4 (0)	45 (1)
Suture-defect (break, pull-out, etc.)	112 (4)	16 (2)	15 (2)	21 (3)	164 (3)
Broken instrument	22 (1)	9 (1)	10 (1)	7 (1)	48 (1)
Loss of traction	8 (0)	5 (1)	4 (1)	5 (1)	22 (0)
Pressure wounds in genitals	1 (0)	0 (0)	0 (0)	0 (0)	1 (0)
Image intensifier defect	1 (0)	1 (0)	0 (0)	0 (0)	2 (0)
Other	61 (2)	19 (2)	23 (3)	22 (3)	125 (2)
Total	243 (12)	85 (11)	84 (11)	72 (9)	578 (11)

Patient Reported Outcome Measures (PROMs)

HAGOS (Copenhagen Hip and Groin Outcome Score)

PROMS pre (n=2930 (55%))	2012-2015	2016	2017	2018	Mean (95% CI)
HAGOS					
Pain	50.6	49.5	49.3	48.6	49.9 (49.2 - 50.6)
Symptoms	48.9	47.4	47.2	46.6	48.1 (47.4 - 48.7)
ADL	52.3	49.9	51.8	49.0	51.3 (50.4 - 52.1)
Sport & rec	34.5	34.5	35.1	33.0	34.3 (33.5 - 35.1)
PA	20.0	20.5	22.8	21.5	20.7 (19.9 - 21.6)
QOL	29.0	29.6	29.4	28.3	29.0 (28.4 - 29.6)

PROMS 1 year (n=2529 (56%))	2012-2015	2016	2017	2018	Mean (95% CI)
HAGOS					
Pain	69.2	69.8	67.2	-	69.1 (68.2 - 70.0)
Symptoms	64.9	65.3	63.5	-	64.9 (64.0 - 65.7)
ADL	71.5	72.2	69.6	-	71.3 (70.3 - 72.3)
Sport & rec	56.0	58.6	53.2	-	56.2 (55.1 - 57.4)
PA	42.2	44.6	38.8	-	42.2 (40.8 - 43.5)
QOL	50.5	52.8	48.8	-	50.7 (49.7 - 51.8)

PROMS 2 years (n=1741 (47%))	2012-2015	2016	2017	2018	Mean (95% CI)
HAGOS					
Pain	69.9	72.9	-	-	70.5 (69.4 - 71.6)
Symptoms	65.2	67.3	-	-	65.6 (64.6 - 66.6)
ADL	72.4	75.3	-	-	73.0 (71.8 - 74.2)
Sport & rec	57.3	61.4	-	-	58.2 (56.8 - 59.5)
PA	44.5	49.6	-	-	45.6 (43.9 - 47.2)
QOL	53.1	56.8	-	-	53.8 (52.6 - 55.0)

PROMS 5 years (n=383 (35%))	2012-2015	2016	2017	2018	Mean (95% CI)
HAGOS					
Pain	72.1	-	-	-	72.1 (69.8 - 74.3)
Symptoms	66.9	-	-	-	66.9 (64.8 - 69.0)
ADL	74.1	-	-	-	74.1 (71.6 - 76.5)
Sport & rec	59.7	-	-	-	59.7 (56.8 - 62.7)
PA	49.1	-	-	-	49.1 (45.5 - 52.6)
QOL	57.3	-	-	-	57.3 (54.6 - 60.0)

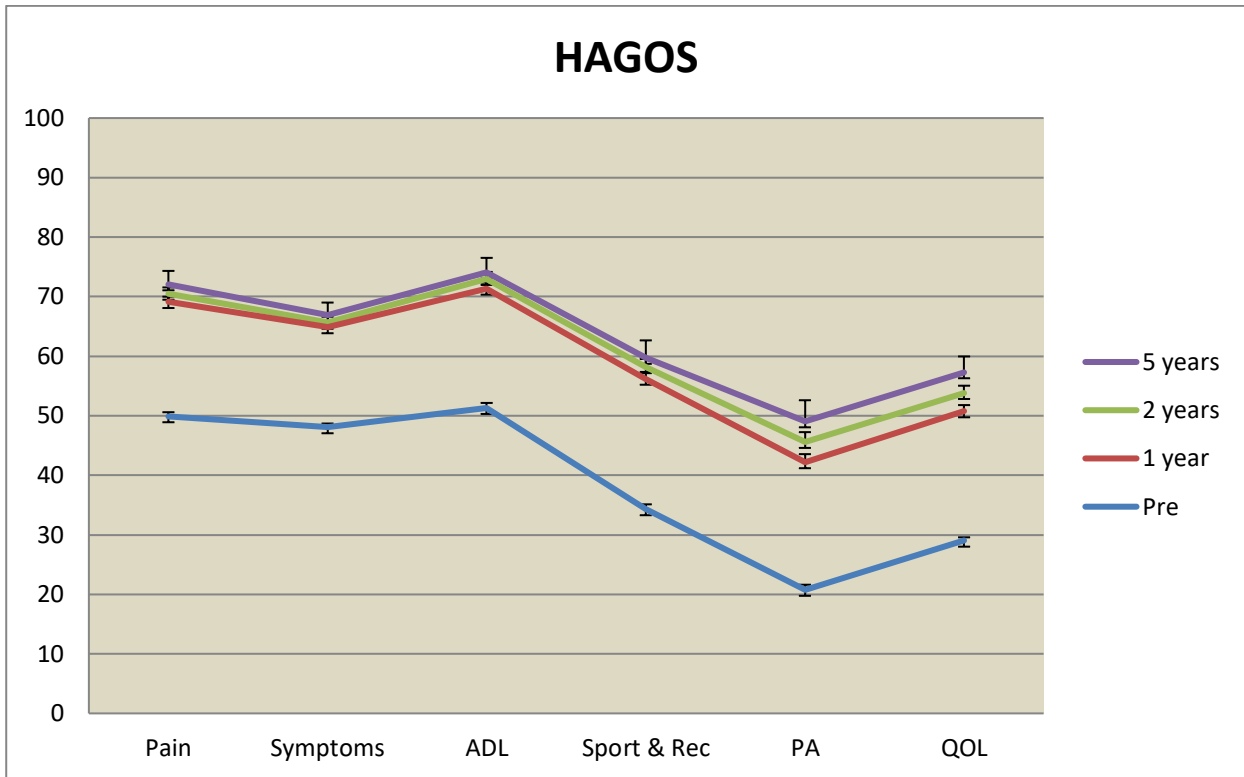


Fig. 1. HAGOS outcome at 1, 2 and 5 years compared to the pre-scores.

iHOT₁₂

In this annual report, the data regarding the iHOT₁₂ are not included. The iHOT₁₂ has now been translated into Danish and will be included in the coming years.

NRS scores for pain

NRS Pain - rest	2012-2015	2016	2017	2018	Mean (95% CI)
Pre	40.4	39.2	40.0	40.4	40.2 (39.3 – 41.1)
1 year	21.4	19.9	20.9	-	21.1 (20.1 – 22.0)
2 years	20.3	17.5	-	-	19.8 (18.7 – 20.9)
5 years	19.4	-	-	-	19.4 (17.2 – 21.6)

NRS pain – walking 15 mins.	2012-2015	2016	2017	2018	Mean (95% CI)
Pre	51.8	50.0	50.3	52.0	51.4 (50.4 – 52.4)
1 year	29.8	26.5	29.3	-	29.0 (27.8 – 30.1)
2 years	26.7	22.3	-	-	26.0 (24.7 – 27.3)
5 years	24.8	-	-	-	24.8 (22.2 – 27.5)

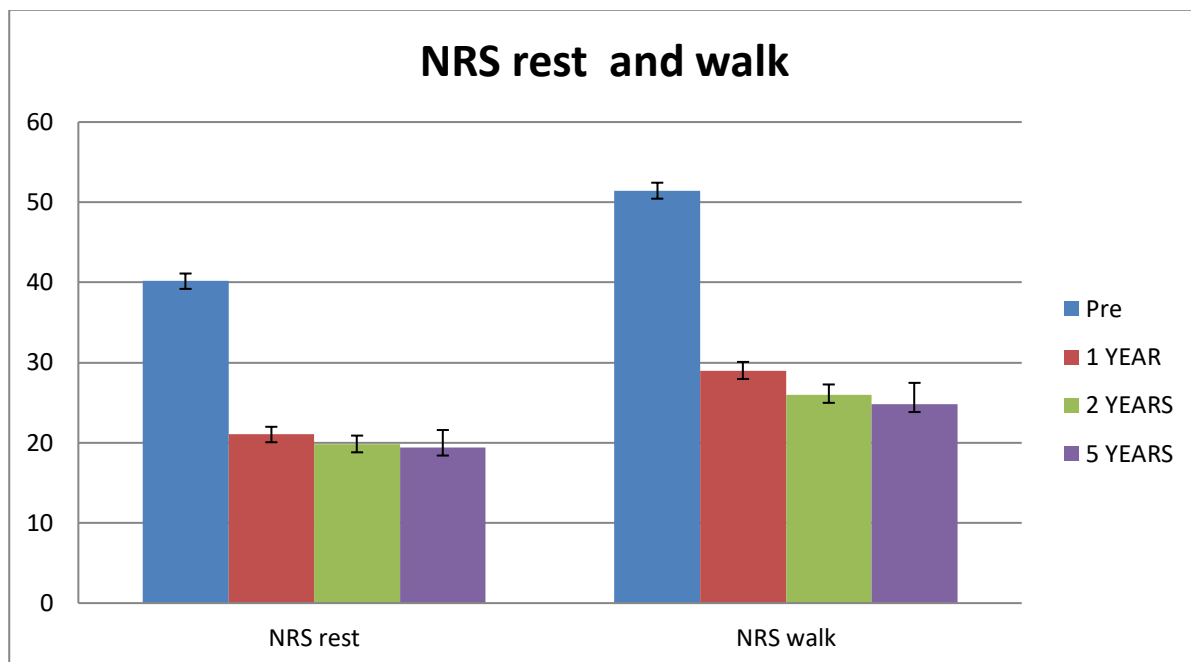


Fig. 2. NRS at rest and walk outcome data at 1, 2 and 5 years compared to the pre-scores.

VAS Overall hip function

VAS – Hip function overall	2012-2015	2016	2017	2018	Mean (95% CI)
Pre	41.7	42.8	40.6	39.0	41.2 (40.5 – 41.9)
1 year	65.8	67.3	64.9	-	66.0 (65.0 – 67.0)
2 years	66.4	70.1	-	-	67.1 (65.9 – 68.3)
5 years	68.9	-	-	-	68.9 (66.4 – 71.3)

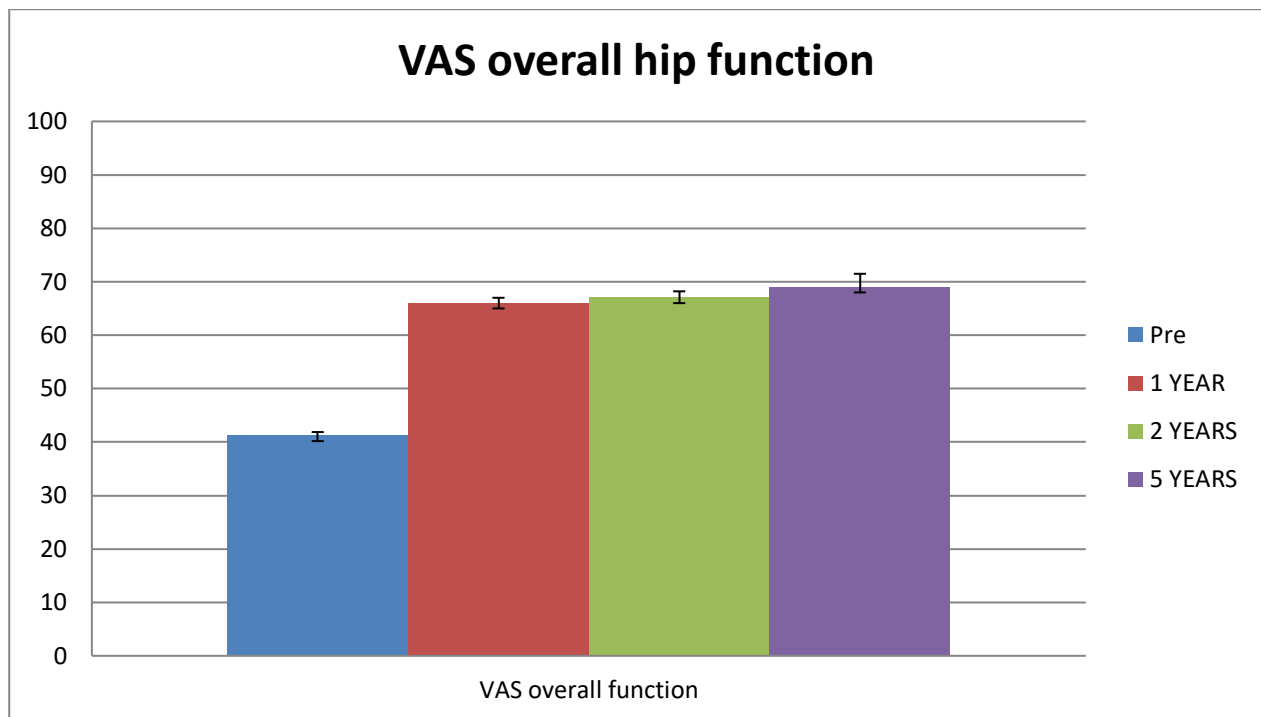


Fig. 3. VAS Overall hip function outcome data at 1, 2 and 5 years compared to the pre-scores.

EQ5D scores

EQ5D	2012-2015	2016	2017	2018	Mean (95% CI)
Pre	0.64	0.65	0.64	0.63	0.64 (0.64 - 0.65)
1 year	0.75	0.75	0.74	-	0.75 (0.74 - 0.76)
2 years	0.77	0.77	-	-	0.77 (0.76 - 0.78)
5 years	0.78	-	-	-	0.78 (0.77 - 0.80)

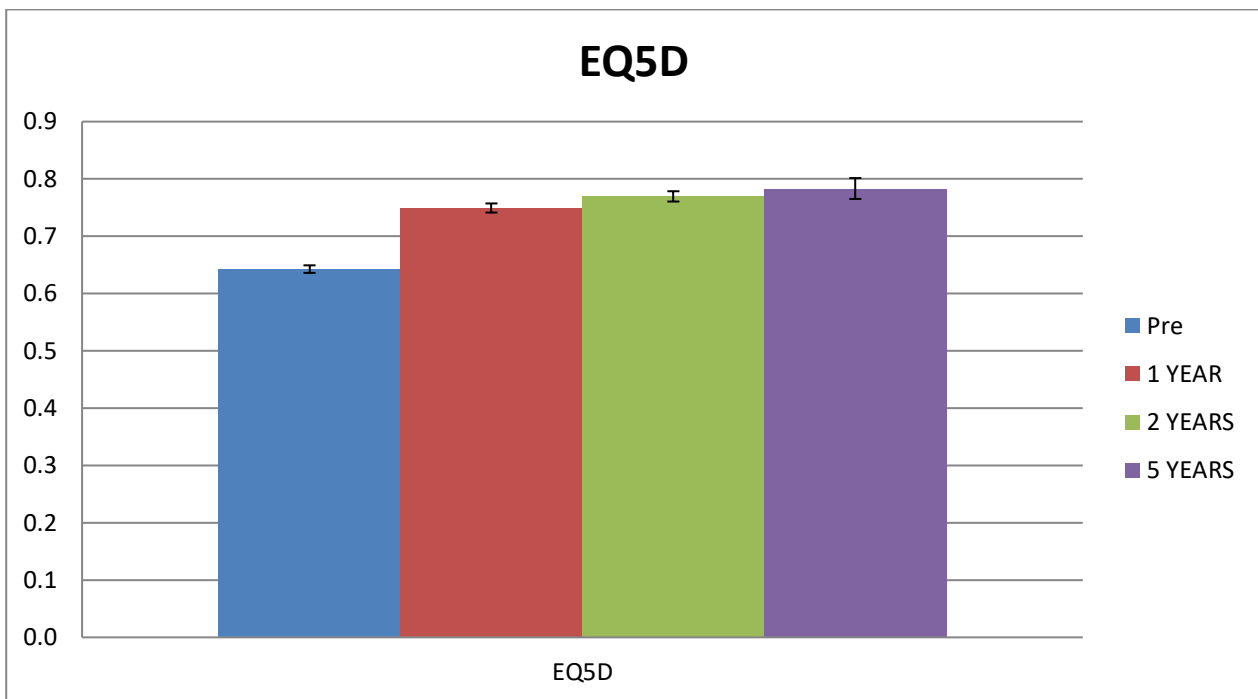


Fig. 4. EQ5D outcome data at 1, 2 and 5 years compared to the pre-scores.

HSAS score (Hip Sports Activity Score)

HSAS	2012-2015	2016	2017	2018	Mean (95% CI)
Pre	2.4	2.6	2.5	2.4	2.4 (2.37 - 2.51)
1 year	3.2	3.1	2.9	-	3.1 (2.98 - 3.28)
2 years	3.3	3.1	-	-	3.2 (3.09 - 3.37)
5 years	3.1	-	-	-	3.1 (2.90 - 3.26)

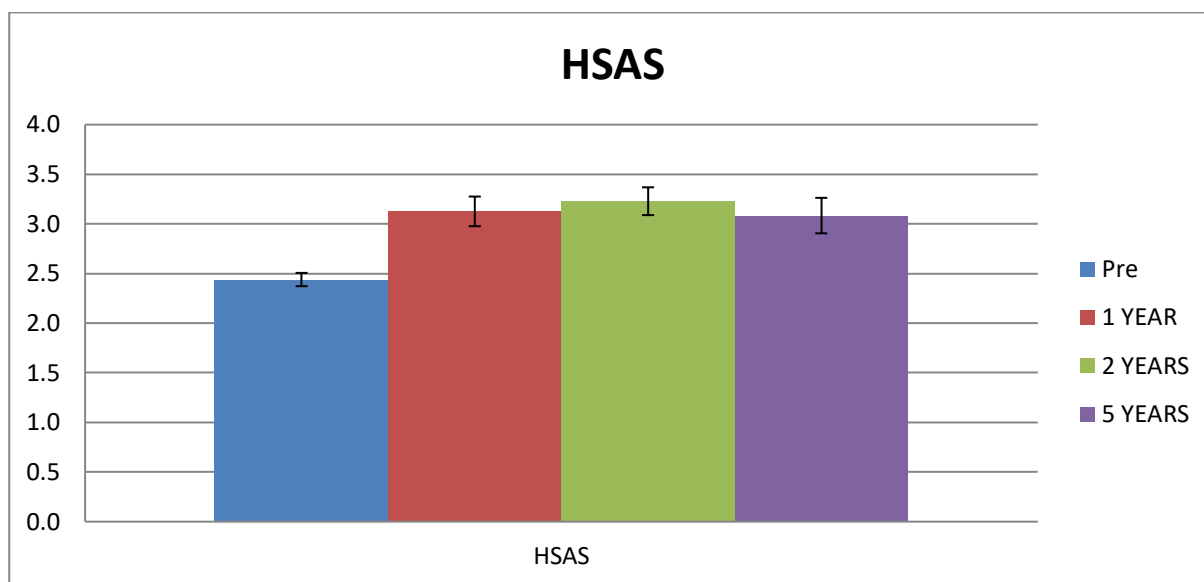


Fig. 5. HSAS outcome data at 1, 2 and 5 years compared to the pre-scores.

MIC improvement

	Pre-MIC	1 YEAR	2 YEARS	5 YEARS
HAGOS				
Pain	9.5	2.0	2.2	2.3
Symptoms	8.8	1.9	2.0	2.1
ADL	11.7	1.7	1.8	1.9
Sport & rec	11.4	1.9	2.1	2.2
PA	12.0	1.8	2.1	2.4
QOL	7.9	2.8	3.2	3.6
NRS – pain rest	12.6	1.5	1.6	1.6
NRS – pain walk	13.7	1.6	1.9	1.9
VAS – Hip function overall	9.6	2.6	2.7	2.9
EQ5D	0.09	1.17	1.39	1.54
HSAS	0.9	0.7	0.9	0.7

This table shows the factor the MIC improved from baseline (pre-op.).

Comments for the PROMs.

The data show a significant improvement in all PROMs but one.

The improvements in all scales are larger than the MIC (minimal important clinical difference, defined as SD/2) except for HSAS. This exception is in accordance with the paper by Thorborg et al. (Thorborg K. et al. Patient-Reported Outcomes Within the First Year After Hip Arthroscopy and Rehabilitation for Femoroacetabular Impingement and/or Labral Injury. The Difference Between Getting Better and Getting Back to Normal. Am J Sport Med 2018;46(11):2607–2614). The largest improvement is seen between pre-op and 1-year post-op. At 5 years the MIC improvement factor is still between 1,5 and 3,6.

Regarding HAGOS the improvements are also significant for PA and QoL (Physical Activity and Quality of Life) between 1 and 2 years and between 2 and 5 years. This late improvement might be explained by a change in patients' expectations over time, as a result of accepting their hip function as it is, even if it is not at the level of a hip symptom-free control group

Sub analysis on Outcome data

HAGOS Age Related data

Comments:

Age group related PROM data demonstrated in all subjective outcomes a significant better result in the below 25 years age group compared to the two older age groups (25-39 year and ≥ 40 year respectively). However, when comparing the middle age group (25-39 year) and the oldest age group (≥ 40 year) it is difficult to explain the lower scores in HAGOS sub scores, PA and Sport & rec. in the middle age group. A possible explanation of these findings might be due to the end of education, the beginning of a working career and family planning etc. in this middle age group, explaining the lower scores in PA and Sport & rec. The older age group is beyond this period in their life, and their expectations may therefore be reduced compared to the middle age group. [3].

Age < 25 years (n=318 (40%)) (PROMS 2 years)	2012-2014	2015	2016	2017	2018	Mean
HAGOS						
Pain	73.3	77.8	72.3	-	-	74.3
Symptoms	65.6	68.3	62.5	-	-	65.7
ADL	77.1	83.2	77.2	-	-	78.9
Sport & rec	60.1	68.8	60.7	-	-	63.0
PA	48.4	61.1	50.0	-	-	51.9
QOL	55,6	61.8	54.5	-	-	56.8

Age 25-39 years (n=539 (46%)) (PROMS 2 years)	2012-2014	2015	2016	2017	2018	Mean
HAGOS						
Pain	67.1	72.1	72.8	-	-	69.1
Symptoms	61.9	66.2	66.2	-	-	63.6
ADL	70.6	75.1	75.3	-	-	72.5
Sport & rec	52.8	60.1	61.1	-	-	56.1
PA	36.4	47.1	48.1	-	-	41.2
QOL	46.5	57.1	57.5	-	-	50.9

Age ≥ 40 years (n=884 (50%)) (PROMS 2 years)	2012-2014	2015	2016	2017	2018	Mean
HAGOS						
Pain	69.6	68.3	73.1	-	-	70.0
Symptoms	66.2	66.2	69.7	-	-	66.8
ADL	70.8	69.3	74.6	-	-	71.1
Sport & rec	57.2	55.6	61.7	-	-	57.7
PA	44.9	45.8	50.3	-	-	46.0
QOL	54.2	53.5	57.4	-	-	54.5

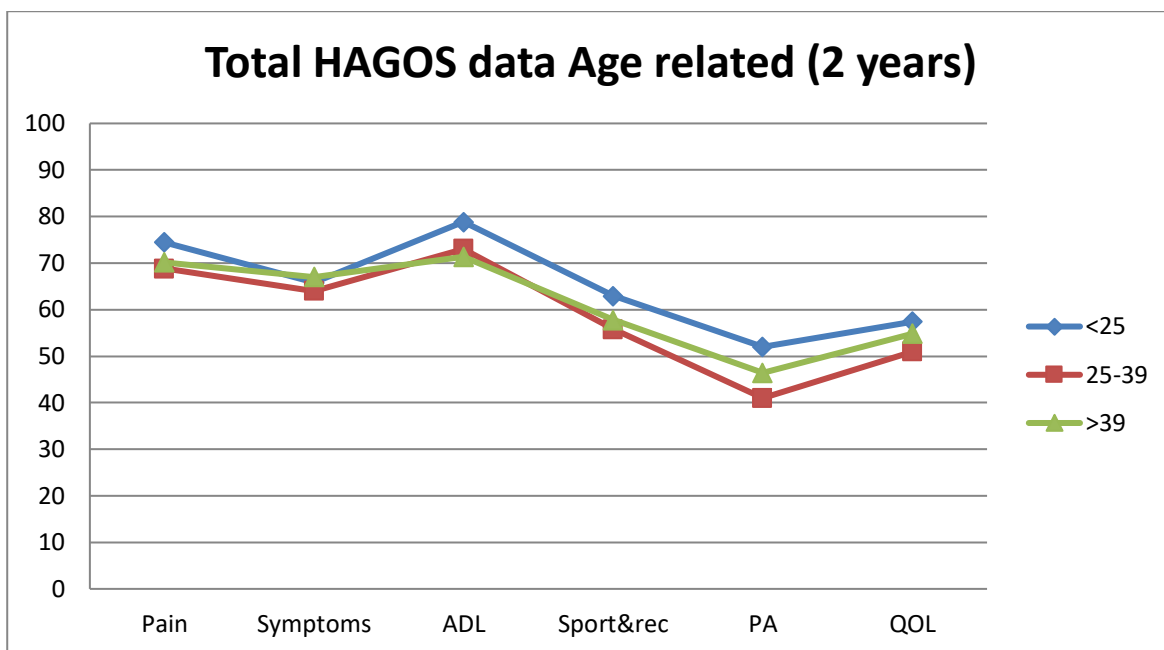


Fig. 6. HAGOS data at 2 years. Comparison of the 3 age groups.

Age related data

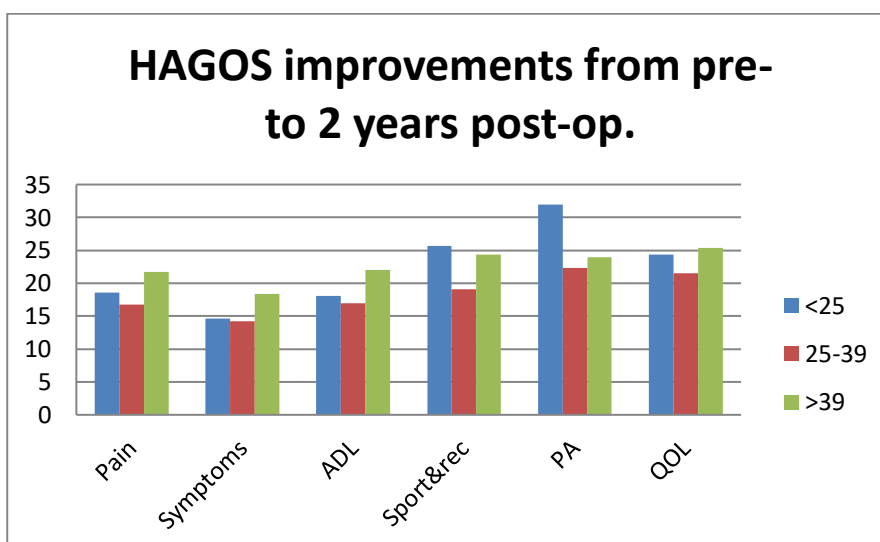


Fig. 7. The improvements in HAGOS from baseline to 2 years postop.

HAGOS data at 2 years related to acetabular cartilage lesions found during surgery

Becks grade 2-4	2012-2014	2015	2016	2017	2018	Mean
HAGOS						
Pain	70.2	71.3	74.0	-	-	71.2
Symptoms	65.4	65.6	68.4	-	-	66.1
ADL	72.8	73.6	75.9	-	-	73.7
Sport & rec	56.9	59.7	61.7	-	-	58.6
PA	42.6	47.8	50.2	-	-	45.2
QOL	52.0	55.1	58.0	-	-	53.8

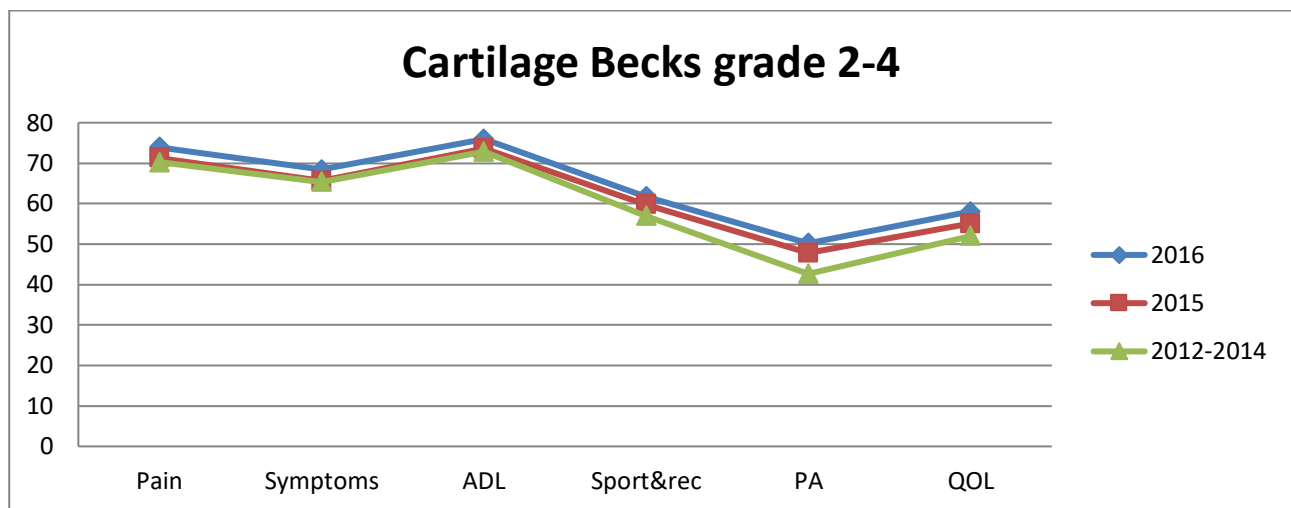


Fig. 8. HAGOS results for Becks grade 2-4 acetabular cartilage status at surgery.

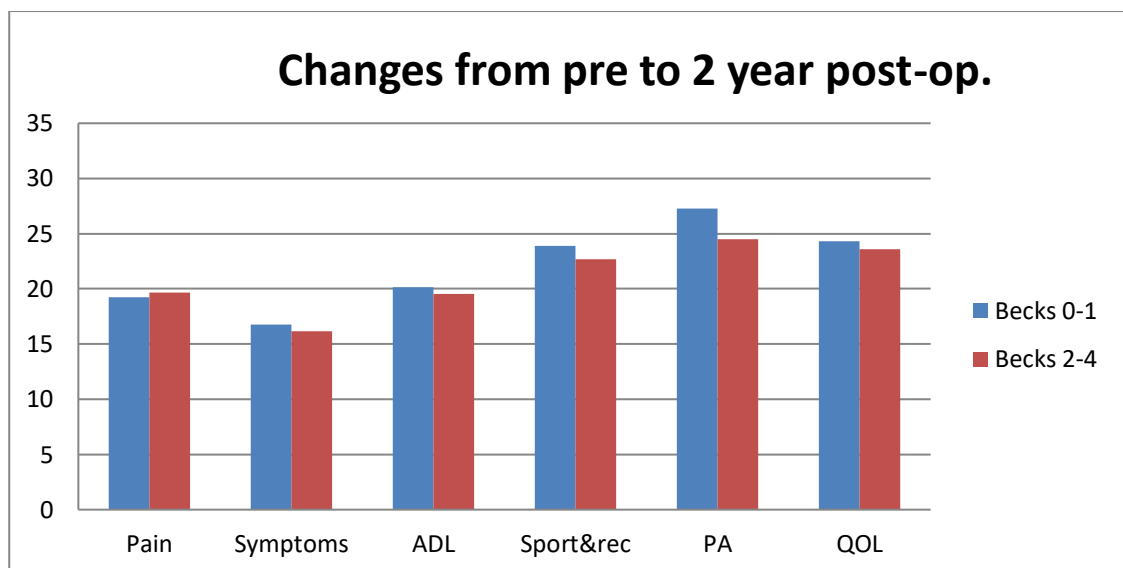


Fig. 9. Improvements in HAGOS outcome at 2 years related to the acetabular cartilage status at surgery.

Dansk resume

I Danmark er hofteartroskopier reguleret af Sundhedsstyrelsen via Specialeplanen for Ortopædkirurgi og er en såkaldt regionsfunktion. Dvs. kun hospitaler og klinikker med denne tildelte funktion må lave hofteartroskopier på patienter i det offentlige sundhedsvæsen. Aktuelt er der 11 hospitaler og klinikker, der har denne tilladelse.

Siden 2012 har det været muligt at indberette online til Dansk Hofte Artroskopi Register (DHAR). Aktuelt er der 15 hospitaler og privatklinikker der indberetter. Forsikringspatienter er ikke omfattet af Specialeplanen for Ortopædkirurgi, men der indberettes også fra privatklinikker, der udfører hofteartroskopier på forsikringspatienter.

Patienterne bedes om at udfylde Patient Relaterede Outcome Measures online før operationen og igen efter 1, 2, 5 og 10 år. (VAS-hoftefunktion, NRS-rest (smerte), NRS-walk (smerte), HAGOS, iHOT12, EQ5D og HSAS score). Pga. en programmeringsfejl er de første års iHOT-12 ikke tilgængelige.

Ved årsskiftet 2018-2019 var der registreret i alt **5332** hofte artroskopier i DHAR. Der er ved årsskiftet registreret **2930** præoperative inklusion PROMs i registeret. Der er **2529** PROMs registreret efter 1 år og der er i alt registreret **1740** 2 års PROMs i DHAR. Endvidere er der ved årsskiftet registreret **383** PROMs med et follow-up på 5 år.

DHAR Styregruppe, Torsten Grønbech Nielsen (databehandler) og Erik Poulsen (LPR-udtræk).

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English summary

In Denmark hip arthroscopies are regulated by the Danish Health Authorities and only 11 public hospitals have the permission to perform the operation on patients from the Public Healthcare System. In 2012 the Danish Hip Arthroscopy Registry was initiated, and the surgeons started to complete the forms on-line. In total 15 hospitals and clinics are reporting to the Registry. Some private clinics report to DHAR even though they are not entitled to.

The patients were asked to complete various Patient Related Outcome Measures pre-operatively (HAGOS, iHOT12, VAS-hip function, NRS-rest (pain), NRS-walk (pain), EQ5D and the HSAS score). Both the surgeon related, and patient related registrations are web based. Due to a programming error iHOT-12 was not included right from the beginning.

At the end of 2018 there are included **5332** Hip Arthroscopies in the registry. There are **2930** pre-op inclusion PROMs included in this report. There are **2529** PROMs included at 1-year and there are **1740** 2-year PROMs in the registry at the end of 2016. So far, we have **383** PROMs with a 5-year follow-up.

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Publications:

- 1. Mygind-Klavsen B, Nielsen TG, Maagaard N *et al.*** Danish Hip Arthroscopy Registry: an epidemiologic and perioperative description of the first 2000 procedures. *J Hip Preserv Surg* 2016;hnw004.
- 2. Lund B, Mygind-Klavsen B, Nielsen TG *et al.*** Danish Hip Arthroscopy Registry (DHAR): the outcome of patients with femoroacetabular impingement (FAI). , DOI: 10.1093/jhps/hnx009.
- 3. Mygind-Klavsen B, Lund B, Nielsen TG *et al.*** Danish Hip Arthroscopy Registry: Predictors of Outcome in Patients with Femoroacetabular Impingement (FAI). *J Hip Preserv Surg* 2016;**3**, DOI: 10.1093/jhps/hnw030.027.
- 4. Lund B, Nielsen TG, Lind M.** Cartilage status in FAI patients – results from the Danish Hip Arthroscopy Registry (DHAR). *SICOT-J* 2017;**3**:44.
- 5. Ishøi L, Thorborg K, Kraemer O *et al.*** Return to Sport and Performance After Hip Arthroscopy for Femoroacetabular Impingement in 18- to 30-Year-Old Athletes: A Cross-sectional Cohort Study of 189 Athletes. *Am J Sports Med* 2018;**46**:2578–87.