

Fertilitetsklinikken Regionshospitalet Skive.

Organisation, produktion og resultater 2018



Formål

Formålet med denne rapport er, at give borgere, relevante myndigheder, instanser og kolleger et indblik i den fertilitetsfremmende virksomhed samt redegøre for organisation, produktion og resultater for Fertilitetsklinikken, Regionshospitalet Skive.

Mission

At dække det offentlige hospitalsvæsens behov for infertilitetsudredning og behandling i Region Midtjylland i samarbejde med de øvrige fertilitetsklinikker i regionen. At tilbyde behandling til patienter fra de øvrige regioner i Danmark. At have forskningsaktivitet indenfor området infertilitet, med henblik på udvikling og forbedring af nuværende behandlinger og implementering af nye behandlingsmetoder.

Personale

Fertilitetsklinikkens daglige ledelse består af en lægelig klinikchef og en afd.bioanalytiker.

Det øvrige personale består af læger, sygeplejersker, bioanalytikere, lægesekretærer, rengøringsassistent samt servicemedarbejdere.

Normering 2017

Stilling	Professor	Læger	Sygeplejersker	Bioanalytikere	Lægesekretærer
Ansatte	1	3	7	7	4

Uddannelse og undervisning

Overlæge Birgit Alsbjerg er ansat som klinisk lektor ved Aarhus Universitet, og har desuden ekspertuddannelse indenfor fertilitet. Afdelingen har 2 Ph.d. studerende og flere tilknyttede samt medicinestuderende. Herudover medvirker klinikken ved uddannelsen af yngre læger samt lægestuderende, sygeplejerskestuderende, bioanalytikerstuderende og jordemoderstuderende.

Aktivitetsliste

- Δ Udredning af infertilitet
- Δ Insemination med anvendelse af mandens sæd (IUI-H)
- Δ Insemination med anvendelse af donorsæd (IUI-D)
- Δ In Vitro fertilisering (IVF)
- Δ IVF med mikroinsemination (ICSI)
- Δ Diagnostisk biopsi af testikler
- Δ Δ Operativ udhentning af sædceller (PESA/TESA) kombineret med ICSI
- Δ Behandling med oplægning af nedfrosne/optøede befrugtede æg (FER)
- Δ Assisted hatching (AHA)
- Δ Ægdonation
- Δ Sæddeponering
- Δ Vævsdeponering (testisvæv)
- Δ Akupunkturbehandling ved ægudhentning
- Δ Akupunkturbehandling ved ægtilbagelægning
- Δ Vægtsamtaler og instruktion til vægttab
- Δ Rygestop instruktion

Produktion gennem de sidste 5 år

Årstal	2014	2015	2016	2017	2018
Henvisninger	501	689	673	697	684
Konsultationer	9995	10684	11820	10722	9550
Ægudtagning	539	591	690	666	638
Ægoplægning	454	433	380	336	263
PESA/TESA	90	46	61	83	79
HSU	127	124	119	93	107
Graviditetsskanning	767	810	905	725	663
Frysebehandling (FER)	246	271	345	536	550
FER med oplægning	221	249	328	523	542
IUI-H	153	148	132	102	104
IUI-D	118	75	86	77	50
Ægdonation	8	17	24	28	27

Resultater 2018

	Antal ægudtagninger OPU/Tø	Antal Ægoplægninger ET	Antal Gravide (positiv hCG)	% gravide pr. Ægoplægning	Antal ongoing gravide	% ongoing gravide pr.ET
IVF	379	131	69	52,7	51	38,9
ICSI	259	132	64	48,9	45	34,1
FRYS	550	542	311	57,4	221	40,8
ÆGDONATION (Recipient behandlinger)	48	48	25	52,1	20	41,7

	Antal Inseminationer IUI	Antal Positive hCG	% positiv hCG pr. IUI	Antal on-Going gravide	Ongoing gravid Pr.IUI (%)
IUI-H	104	14	13,5	10	9,6
IUI-D	50	11	22,0	11	22,0

Forventet antal børn efter behandling i 2018

	Singleton	Flerfold	Antal forventet fødte børn
IUI-H	9	1	11
IUI-D	10	1	12
IVF/ICSI	90	6	103
FRYS	214	7	228
ÆGDONATION	20	0	20
TOTAL	348	15	374

Præsentation af afdelingens vigtigste forskningsaktivitet.

I 2018 forsvarede vores første Ph.d. sin afhandling i august. Opponentterne fra Australien og England var meget tilfredse og imponerede. En stor og festlig dag for alle.

Året har været præget af stor aktivitet og stort fokus på forskningen.

Klinikken har været involveret i mange projekter, de fleste forsker-initierede, men også projekter initieret af industrien.

Vi har fået tilknyttet flere yngre forskere, der er godt i gang med forskellige opgaver og forskningsprojekter.

En af vores yngre forskere har fået tildelt Lundbeckfondens talentpris – meget fornemt.

Der er mange projekter i gang og alle gør en kæmpestor indsats og bidrager til deres gennemførelse.

Der har været stor deltagelse fra forskellige faggrupper i faglige kongresser såvel nationalt som internationalt.

Ligeledes har afdelingen selv været vært for internationale faglige møder. Afdelingen arbejder fortsat på at blive Universitetsklinik. Man har fra regionens side ønsket at få én fælles Universitetsklinik. Arbejdet fortsætter derfor i samarbejde med Fertilitetsklinikken i Horsens.

Igangværende forskningsprojekter

Forsker-initierede projekter: Forsker-initierede projekter

- A double-blind, placebo-controlled multicenter trial on the effect of clindamycin and probiotic on the reproductive outcomes of IVF patients with abnormal vaginal microbiota.
Haahr T, supervised by Humaidan P.
- A multicentre randomized trial of a "Freeze all and transfer later" versus conventional "Fresh embryo transfer" strategy for assisted reproductive technology (ART) in women with a regular cycle.
Pinborg A, Humaidan P.
- Substitueret fryseprotokol med GnRH-agonist, der er kontrolleret, randomiseret multicenter-studie med flere danske klinikker involveret.
Alsbjerg B.

Daytime profile salivary proesterone during the mid-luteal phase of IVF and FET cycles.

Alsbjerg B

- Testosterone TRANSdermal gel for poor ovarian responders trial.
Polyzos N, Humaidan P.
- The exogenous progesterone free luteal phase after GnRHa trigger – a randomized controlled pilot study in high-responder IVF patients.
Humaidan P.
- The exogenous progesterone free luteal phase after GnRHa trigger – a randomized controlled pilot study in normo-responder IVF patients.
Humaidan P.
- The microbiome of infertile couples and its effect on the reproductive outcomes – a prospective cohort study.
Haahr T, supervised by Humaidan P.

De enkelte projekter er yderligere beskrevet på Fertilitetsklinikkens hjemmeside.

<http://www.hospitalsenhedmidt.dk/afdelinger-og-centre/kvindesygdomme-og-foedsler/fertilitetsklinikken-skive/om-fertilitetsklinikken/forskning---for-fagfolk/>

- Medicinalindustri-initierede projekter: A phase IV, single-blinded, prospective, randomized, controlled, multicenter, study to compare clinical outcomes of GERI + timelapse system with conventional embryo culture and assesment system.
Povlsen BB.
- Implant 2 – et fase 3 dobbeltblinded, rando-miseret, placebo-kontrolleret studie med det formål at undersøge sikkerhede effekten af en enkelt dosis oralt nolasiban til forbedring af graviditetsfrekvensen i IVF /ICSI med oplægning på dag 3 eller 5.
Humaidam P, Elbaek H

Videnskabelige og populærvideenskabelige publikationer offentliggjorte i 2018

- (1) Abbara A, Islam R, Clarke SA, Jeffers L, Christopoulos G, Comninou AN, Salim R, Lavery SA, Vuong TNL, **Humaidan P**, Kelsey TW, Trew GH, Dhillon WS. Clinical parameters of ovarian hyperstimulation syndrome following different hormonal triggers of oocyte maturation in IVF treatment. *Clin Endocrinol (Oxf)* 2018 Jun;88(6):920-927.
- (2) Abbara A, Vuong LN, Ho VNA, Clarke SA, Jeffers L, Comninou AN, Salim R, Ho TM, Kelsey TW, Trew GH, **Humaidan P**, Dhillon WS. Follicle Size on Day of Trigger Most Likely to Yield a Mature Oocyte. *Front Endocrinol (Lausanne)* 2018 Apr 25;9:193.
- (3) Aflatoonian A, Mansoori-Torshizi M, Farid Mojtahedi M, Aflatoonian B, Khalili MA, Amir-Arjmand MH, Soleimani M, Aflatoonian N, Oskouian H, Tabibnejad N, **Humaidan P**. Fresh versus frozen embryo transfer after gonadotropin-releasing hormone agonist trigger in gonadotropin-releasing hormone antagonist cycles among high responder women: A randomized, multi-center study. *Int J Reprod Biomed (Yazd)* 2018 Jan;16(1):9-18.
- (4) **Alsbjerg B, Hahr T, Elbaek HO, Laursen R, Povlsen BB, Humaidan P**. The Bologna criteria patient and dual stimulation for IVF using long-acting FSH - a cohort study. *Human Reproduction* 2018 JUL;33:440-441.
- (5) **Alsbjerg B, Thomsen L, Elbaek HO, Laursen R, Povlsen BB, Haahr T, Humaidan P**. Progesterone levels on pregnancy test day after hormone replacement therapy-cryopreserved embryo transfer cycles and related reproductive outcomes. *Reprod Biomed Online* 2018 Nov;37(5):641-647.
- (6) Alviggi C, Conforti A, **Esteves SC**, Andersen CY, Bosch E, Buhler K, Ferraretti AP, De Placido G, Mollo A, Fischer R, **Humaidan P**, International Collaborative Group for the Study of r-hLH (iCOS-LH). Recombinant luteinizing hormone supplementation in assisted reproductive technology: a systematic review. *Fertil Steril* 2018 Apr;109(4):644-664.
- (7) Alviggi C, Conforti A, Santi D, **Esteves SC**, Andersen CY, **Humaidan P**, Chiodini P, De Placido G, Simoni M. Clinical relevance of genetic variants of gonadotrophins and their receptors in controlled ovarian stimulation: a systematic review and meta-analysis. *Hum Reprod Update* 2018 Sep 1;24(5):599-614.
- (8) Andersen MF, Drakopoulos P, Humaidan P, Gomez JL, Bruna I, Rombauts L, Ribeiro SDS, Dosouto C, Coroleu B, Barri PN, **Polyzos NP**. Off-label use of androgens and letrozole in infertile women - a multinational survey in Europe and Australia. *Human Reproduction* 2018 JUL;33:499-499.
- (9) Bosch E, Bulletti C, Copperman AB, Fanchin R, Yarali H, Petta CA, Polyzos NP, Shapiro D, Ubaldi FM, Garcia Velasco JA, Longobardi S, D'Hooghe T, **Humaidan P**, Delphi TTP Consensus Group. How time to healthy singleton delivery could affect decision-making during infertility treatment: a Delphi consensus. *Reprod Biomed Online* 2018 Nov 7;[Epub ahead of print].

- (10) Drakopoulos P, Rosetti J, Pluchino N, Blockeel C, Santos-Ribeiro S, de Brucker M, Drakakis P, Camus M, Tournaye H, **Polyzos NP**. Does the type of GnRH analogue used, affect live birth rates in women with endometriosis undergoing IVF/ICSI treatment, according to the rAFS stage? *Gynecol Endocrinol* 2018 Oct;34(10):884-889.
- (11) **Esteves S**, Carvalho JF, Martinhago C, Dias AM, **Humaidan P**, Alviggi C, Conforti A, Ubaldi F, Fischer R, Buehler K, Andersen CY. A novel maternal age and blastocyst cohort size-based prediction model estimating the probability of obtaining at least one euploid blastocyst for transfer in IVF/ICSI cycles. *Human Reproduction* 2018 JUL;33:321-322.
- (12) **Esteves S, Humaidan P**, Carvalho J, Ciro M, Dias A, Alviggi C, Conforti A, Fischer R, Andersen C, Buhler K, Ubaldi F. Estimation of age-dependent decrease in blastocyst euploidy in in vitro fertilization/intracytoplasmic sperm injection cycles. *Human Reproduction* 2018 JUL;33:4-4.
- (13) Esteves SC, Carvalho JF, Martinhago CD, Melo AA, Bento FC, **Humaidan P**, Alviggi C, POSEIDON (Patient-Oriented Strategies Encompassing Individualized Oocyte Number) Group. Estimation of age-dependent decrease in blastocyst euploidy by next generation sequencing: development of a novel prediction model. *Panminerva Med* 2018 Jun 28;[Epub ahead of print].
- (14) **Esteves SC**, Roque M, Bedoschi G, **Haahr T, Humaidan P**. Intracytoplasmic sperm injection for male infertility and consequences for offspring. *Nat Rev Urol* 2018 Sep;15(9):535-562.
- (15) **Esteves SC**, Roque M, Bedoschi GM, Conforti A, **Humaidan P**, Alviggi C. Defining Low Prognosis Patients Undergoing Assisted Reproductive Technology: POSEIDON Criteria-The Why. *Front Endocrinol (Lausanne)* 2018 Aug 17;9:461.
- (16) Grode L, Bech BH, Plana-Ripoll O, Bliddal M, Agerholm IE, **Humaidan P**, Ramlau-Hansen CH. Reproductive life in women with celiac disease; a nationwide, population-based matched cohort study. *Hum Reprod* 2018 Jun 15;[Epub ahead of print].
- (17) Grode LB, Agerholm IE, **Humaidan P**, Parkner T, Bech BH, Ramlau-Hansen CH, Jensen TM. Unrecognised coeliac disease among men and women undergoing fertility treatment: A screening study. *United European Gastroenterol J* 2018 Dec;6(10):1477-1484.
- (18) Gustafson LW, Christiansen AG, Majeed H, **Humaidan P**. Nonspecific Symptoms in a Rare Case of Urethral Adenocarcinoma in a 58-Year-Old Female. *Case Rep Obstet Gynecol* 2018 May 23;2018:9010246.
- (19) **Haahr T, Esteves SC, Humaidan P**. Individualized controlled ovarian stimulation in expected poor-responders: an update. *Reprod Biol Endocrinol* 2018 Mar 9;16(1):20-018-0342-1.

- (20) **Haahr T, Esteves SC, Humaidan P.** Poor definition of poor-ovarian response results in misleading clinical recommendations. *Hum Reprod* 2018 May 1;33(5):979-980.
- (21) **Haahr T, Humaidan P, Elbaek HO, Alsbjerg B, Laursen RJ,** Rygaard K, Johannesen TB, Andersen PS, Ng KL, Jensen JS. Vaginal microbiota and IVF outcomes: development of a simple diagnostic tool to predict patients at risk of a poor reproductive outcome. *J Infect Dis* 2018 Dec 29;[Epub ahead of print].
- (22) **Haahr T,** Kesmodel US, Andersen CY, **Thomsen LH, Humaidan P.** Daytime variation in serum progesterone during the mid-luteal phase in women undergoing IVF treatment. *Human Reproduction* 2018 JUL;33:109-109.
- (23) **Haahr T,** Zacho J, Brauner M, Shathmigha K, Skov Jensen J, **Humaidan P.** Reproductive outcome of patients undergoing in vitro fertilization treatment and diagnosed with bacterial vaginosis or abnormal vaginal microbiota: a systematic PRISMA review and meta-analysis. *BJOG* 2018 Feb 22;[Epub ahead of print].
- (24) **Humaidan P,** Kristensen SG, Coetzee K. Mitochondrial DNA, a new biomarker of embryonic implantation potential: fact or fiction? *Fertil Steril* 2018 Jan;109(1):61-62.
- (25) Ketheeswaran S, **Haahr T, Povlsen B, Laursen R, Alsbjerg B, Elbaek H, Esteves SC, Humaidan P.** Protein supplementation intake for bodybuilding and resistance training may impact sperm quality of subfertile men undergoing fertility treatment: a pilot study. *Asian J Androl* 2018 Sep 18;[Epub ahead of print].
- (26) Kristensen SG, **Humaidan P,** Coetzee K. Mitochondria and reproduction: possibilities for testing and treatment. *Panminerva Med* 2018 Jun 28;[Epub ahead of print].
- (27) La Marca A, Blockeel C, Bosch E, Fanchin R, Fatemi HM, Fauser BC, Garcia-Velasco JA, **Humaidan P,** Tarlatzis BC, Nelson SM. Corrigendum: Letter to the Editor: Individualized FSH dosing improves safety and reduces iatrogenic poor response while maintaining live-birth rates. *Hum Reprod* 2018 Jul 1;33(7):1372.
- (28) La Marca A, Blockeel C, Bosch E, Fanchin R, Fatemi HM, Fauser BC, Garcia-Velasco JA, **Humaidan P,** Tarlatzis BC, Nelson SM. Individualized FSH dosing improves safety and reduces iatrogenic poor response while maintaining live-birth rates. *Hum Reprod* 2018 May 1;33(5):982-983.
- (29) **Laursen RJ, Alsbjerg B,** Vogel I, Gravholt CH, **Elbaek H,** Lildballe DL, **Humaidan P,** Vestergaard EM. Case of successful IVF treatment of an oligospermic male with 46,XX/46,XY chimerism. *J Assist Reprod Genet* 2018 Jul;35(7):1325-1328.
- (30) Lehert P, Chin W, Schertz J, D'Hooghe T, Alviggi C, **Humaidan P.** Predicting live birth for poor ovarian responders: the PROsPeR concept. *Reprod Biomed Online* 2018 Jul;37(1):43-52.

- (31) Ozgur K, Bulut H, Berkkanoglu M, **Humaidan P**, Coetzee K. Artificial cryopreserved embryo transfer cycle success depends on blastocyst developmental rate and progesterone timing. *Reprod Biomed Online* 2018 Mar;36(3):269-276.
- (32) Roque M, **Haahr T, Esteves SC, Humaidan P**. The 'Big Freeze': freeze-all should not be used for everyone. *Hum Reprod* 2018 Jun 15;[Epub ahead of print].
- (33) Roque M, **Haahr T**, Geber S, Esteves SC, **Humaidan P**. Fresh versus elective frozen embryo transfer in IVF/ICSI cycles: a systematic review and meta-analysis of reproductive outcomes. *Hum Reprod Update* 2018 Nov 2;[Epub ahead of print].
- (34) Roque M, Nuto Nobrega B, Valle M, Sampaio M, Geber S, **Haahr T, Humaidan P, Esteves SC**. Freeze-all strategy in IVF/ICSI cycles: an update on clinical utility. *Panminerva Med* 2018 Jun 28;[Epub ahead of print].
- (35) **Thomsen L**, Kesmodel US, Erb K, **Humaidan P**. Mid-luteal serum progesterone levels determine the reproductive outcome following controlled ovarian stimulation. A prospective study of 602 IVF/ICSI cycles. *Human Reproduction* 2018 JUL;33:345-346.
- (36) **Thomsen LH**. The impact of luteal serum progesterone levels on reproductive outcomes following IVF treatment and fresh embryo transfer : PhD dissertation. Aarhus: Health, Aarhus University; 2018.
- (37) **Thomsen LH, Humaidan P**, Erb K, Overgaard M, Andersen CY, Kesmodel US. Mid-Luteal 17-OH Progesterone Levels in 614 Women Undergoing IVF-Treatment and Fresh Embryo Transfer-Daytime Variation and Impact on Live Birth Rates. *Front Endocrinol (Lausanne)* 2018 Nov 29;9:690.
- (38) **Thomsen LH**, Kesmodel US, Andersen CY, **Humaidan P**. Daytime Variation in Serum Progesterone During the Mid-Luteal Phase in Women Undergoing In Vitro Fertilization Treatment. *Front Endocrinol (Lausanne)* 2018 Mar 19;9:92.
- (39) **Thomsen LH**, Kesmodel US, Andersen CY, **Humaidan P**. Reply: Low as well as high serum P4 levels in the early and mid-luteal phase reduce the chance of a live birth following IVF treatment with fresh embryo transfer. *Hum Reprod* 2018 Dec 1;33(12):2314-2315.
- (40) **Thomsen LH**, Kesmodel US, Erb K, Bungum L, Pedersen D, Hauge B, **Elbaek HO, Povlsen BB**, Andersen CY, **Humaidan P**. The impact of luteal serum progesterone levels on live birth rates-a prospective study of 602 IVF/ICSI cycles. *Hum Reprod* 2018 Jun 28;[Epub ahead of print].

