La **simulation** en médecine de la reproduction

www.deziegler.com

19-23 Mars 2018
11-15 Juin 2018

Diplôme Universitaire d'Infertilité, Assistance Médicale à la Reproduction (AMP) et Endocrinologie de la Reproduction

Pr D de Ziegler Pr JM Ayoubi

Semaine #1 19-23 Mars 2018

Semaine #2 11-25 Juin 2018

Préinscriptions : secretariat.deziegler@gmail.com

Programme www.deziegler.com

Objectif

Proposer un outil d'enseignement post gradué en infertilité clinique pour médecins gynécologues, sagefemmes, biologistes et coordinateurs de centre d'infertilité (90h). Le DU associera une formation théorique (36h) et des applications pratiques (54h). Ces dernières seront fournies par : (i) des sessions de simulation (30h) utilisant des modèles techniques et la création de scenarios et, (ii) des séminaires (24h).

Introduction

5	Lundi	Mardi	Mercredi	Jeudi	Vendredi	
8.0-850	Introduction	Troubles ovulation	Endométriose	Chirurgie endométriose	Génétique 1	
9.0-9.50	Epidémiologie infertilité	Réserv. Ov. et IO	Environnement infertilité	Chirurgie fibromes	Génétique 2	
10.-10.50	Antécédents infertilité	Exercices pratiques	Exercices pratiques	Exercices pratiques	Exercices pratiques	1
11.0-11.50	Bilan hormones	Biologie 1	Biologie 2	Chirurgie tubaire	Psychologie sexologie	
12.0- 13.0	*Déjeuner*	*Déjeuner*	*Déjeuner*	*Déjeuner*	*Déjeuner*	
13.0-13.50	planification	Consult bio	Visite entrante	Monito CC	Monito FSH	
14.0-14.50	Bilan imagerie	OPK et synd métabol	Control réceptivité	Patholol infectieuses	Transplant utérine	
15.0-15.50	Simulation 1	Simulation 2	Simulation 3	Simulation 4	Simulation 5	2
16.0-16.50						
17.0-17.50						

Fig. 1 Planning de la 1re semaine

Introduction

5	Lundi	Mardi	Mercredi	Jeudi	Vendredi
8.0-850	Introduction	Troubles ovul	Endométriose	Chirurgie	Génétique 1
9.0-9.50	Epidémiologie infertilité	Rés e			
10.-10.50	Antécédents infertilité	Exe pra			
11.0-11.50	Bilan hormones	Bio			
12.0- 13.0	*Déjeuner*	*Dé*			
13.0-13.50	planification	Con			
14.0-14.50	Bilan imagerie	OPK mé			
15.0-15.50	Simulation 1	Simu			
16.0-16.50					
17.0-17.50					

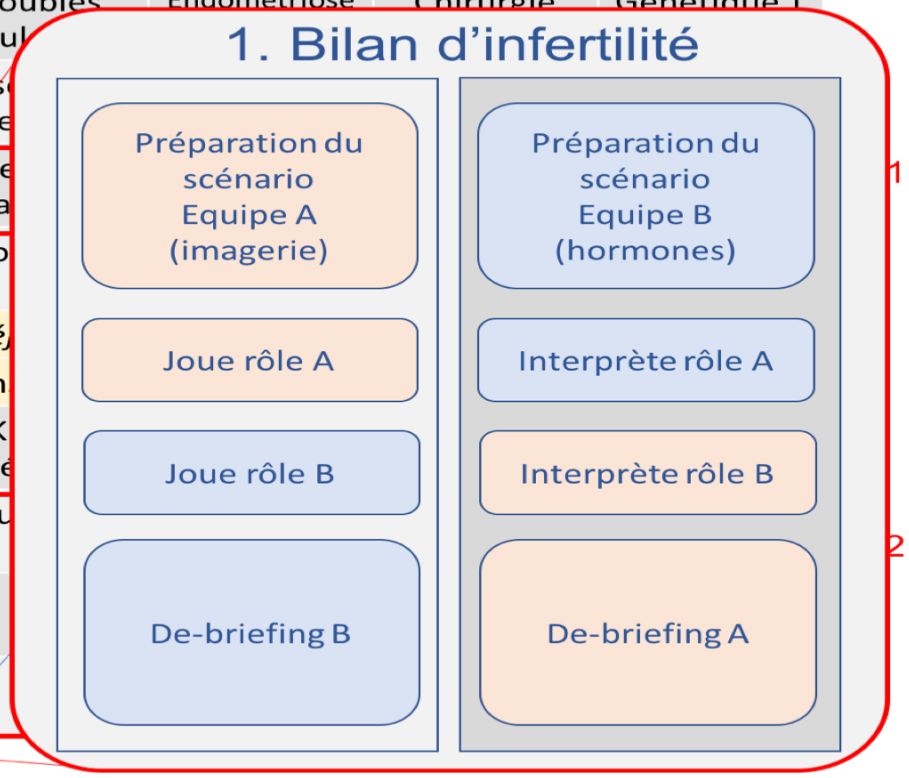


Fig. 3 Description d'une séance de formation par la simulation. Les étudiants sont repartis en deux groupes préparant chacun un scenario qui sera partage avec le groupe réciproque avec de-briefing.

Introduction

Human Reproduction, Vol.32, No.4 pp. 811–819, 2017
Advanced Access publication on February 8, 2017 doi:10.1093/humrep/dex012

human reproduction | ORIGINAL ARTICLE *Infertility*

The addition of anti-Müllerian hormone in an algorithm for individualized hormone dosage did not improve the prediction of ovarian response—a randomized, controlled trial

Å. Magnusson[1,*], L. Nilsson[1], G. Oleröd[2], A. Thurin-Kjellberg[1], and C. Bergh[1]

[1]Department of Obstetrics and Gynaecology, Institute of Clinical Sciences, Sahlgrenska Academy, Gothenburg University, Reproductive Medicine, Sahlgrenska University Hospital, SE-413 45 Gothenburg, Sweden [2]Department of Clinical Chemistry, Sahlgrenska University Hospital, SE-413 45 Gothenburg, Sweden

*Correspondence address. Department of Obstetrics and Gynaecology, Institute of Clinical Sciences, Sahlgrenska Academy, Gothenburg University, Reproductive Medicine, Sahlgrenska University Hospital, SE-413 45 Gothenburg, Sweden. E-mail: asa.magnusson@vgregion.se

Submitted on September 28, 2016; resubmitted on December 23, 2016; accepted on January 11, 2017

STUDY QUESTION: Does the addition of anti-Müllerian hormone (AMH) to a conventional dosage regimen, including age, antral follicle count (AFC) and BMI, improve the rate of targeted ovarian response, defined as 5–12 oocytes after IVF?

SUMMARY ANSWER: The addition of AMH did not alter the rate of targeted ovarian response, 5–12 oocytes, or decreased the rate of ovarian hyperstimulation syndrome (OHSS) or cancelled cycles due to poor ovarian response.

WHAT IS KNOWN ALREADY: Controlled ovarian hyperstimulation (COH) in connection with IVF is sometimes associated with poor ovarian response resulting in low pregnancy and live birth rates or leading to cycle cancellations, but also associated with excessive ovarian response, causing an increased risk of OHSS. Even though it is well-established that both AMH and AFC are strong predictors of ovarian response in IVF, few randomized trials have investigated their impact on achieving an optimal number of oocytes.

STUDY DESIGN, SIZE AND DURATION: Between January 2013 and May 2016, 308 patients starting their first IVF treatment were randomly assigned, using a computerized randomization program with concealed allocation of patients and in the proportions of 1:1, to one of two dosage algorithms for decisions on hormone starting dose, an algorithm, including AMH, AFC, age and BMI (intervention group), or an algorithm, including only AFC, age and BMI (control group). The study was blinded to patients and treating physicians.

PARTICIPANTS/MATERIALS, SETTING, METHODS: Women aged >18 and <40 years, with a BMI above 18.0 and below 35.0 kg/m^2 starting their first IVF cycle where standard IVF was planned, were eligible. All patients were treated with a GnRH agonist protocol and recombinant FSH was used for stimulation. The study was performed as a single-centre study at a large IVF unit at a university hospital.

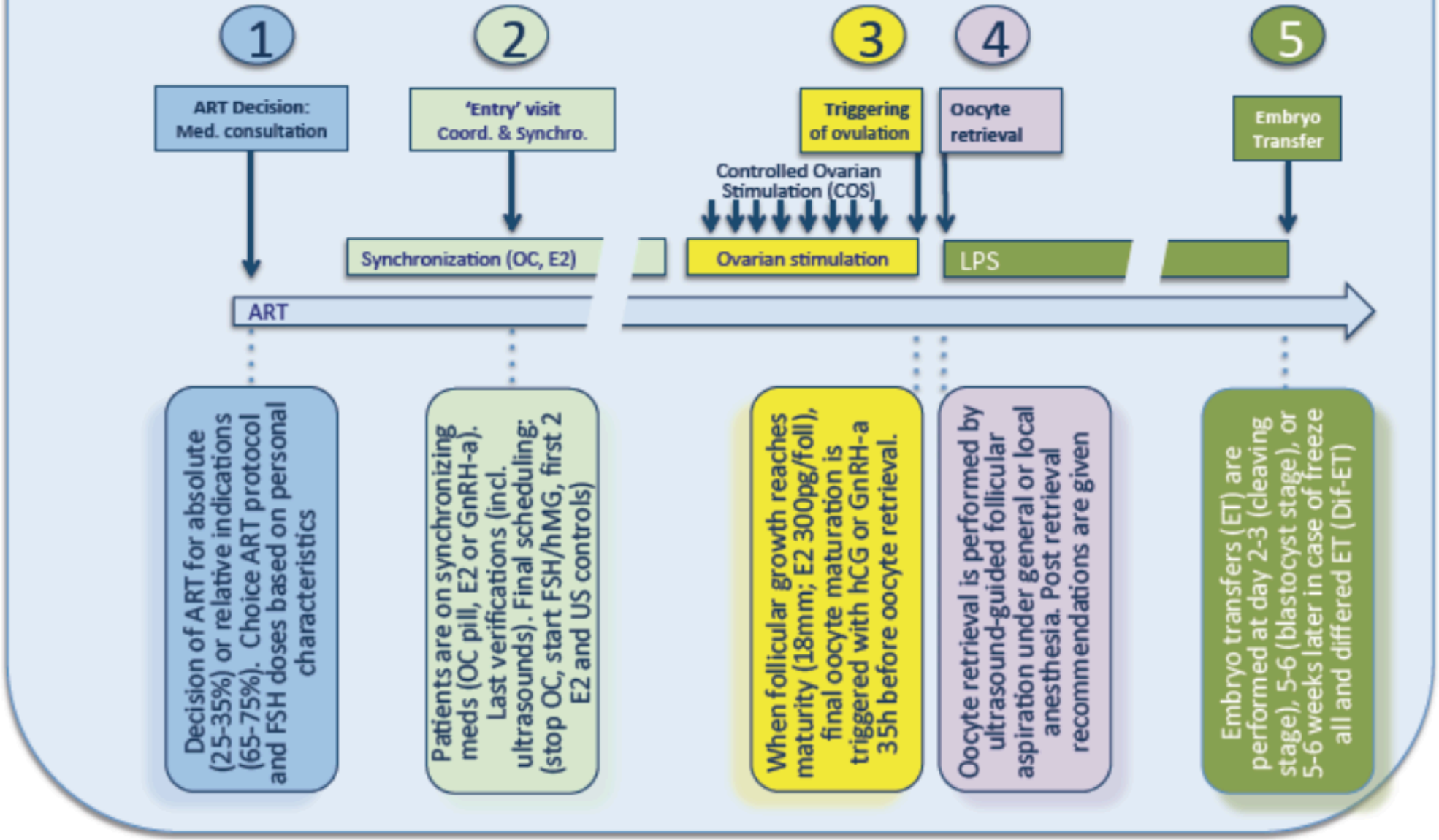
MAIN RESULT AND THE ROLE OF CHANCE: The rate of patients having the targeted number of oocytes retrieved was 81/152 (53.3%) in the intervention group versus 96/155 (61.9%) in the control group ($P = 0.16$, difference: −8.6, 95% CI: −20.3; 3.0). Cycles with poor response (<5 oocytes) were more frequent in the AMH group, 39/152 (25.7%) versus the non-AMH group, 17/155 (11.0%) ($P < 0.01$), while the number of cancelled cycles due to poor ovarian response did not differ 7/152 (4.6%) and 4/155 (2.6%) ($P = 0.52$). An excessive response (>12 oocytes) was seen in 32/152 (21.1%) and 42/155 (27.1%) patients, respectively ($P = 0.27$). Moderate or severe OHSS was observed among 5/152 (3.3%) and 6/155 (3.9%) patients, respectively ($P = 1.0$).
Live birth rates were 48/152 (31.6%) and 42/155 (27.1%) per started cycle.

Presentation

Added materials

ART practically

Sequence of 5 key steps



Executive summary:

ART is the corner stone of nowadays infertility treatments. In certain couples, ART may be the sole treatment possible. In others, it is the ultimate reference to consider when all else has failed.

ART is a process comprised of 5 key functional steps. Each of these steps carries its own specificities, treatment characteristics and the related materials addressing information-warning-consent issues. These 5 steps of ART are reviewed here on the therapeutic standpoint whereas. The address the issues related to (i) risk assessment and (ii) complications are addressed in section 3 and 5 of the Doctor's Operating Manual, respectively.

1 ART decision

1.1 Indications for ART: absolute or relative

The decision to proceed to ART for treating infertility or other reasons (genetic, fertility preservation, etc.) follows an appropriate and thorough workup (see workup). The choice takes into account all pertinent medical and personal parameters and overall risk-benefit assessment (see decision making).

When ART has been proposed and decided with a couple, one distinguishes:

- **Absolute indication**: ART – using regular in vitro fertilization (IVF) or ICSI in case of male factor – is a key element in the treatment of infertility. It's the only option possible in case absolute tubal factor (absent or blocked tubes) or severe male factor (≤1,000,000 motile sperm recuperated in the selection test). All together these 2 indications for IVF represent only 25-35% of all ART cycles conducted today at an average infertility center. These cases are the only absolute indications for ART. As ART is the only possible option, there is no discussion about its urgency.

- **Relative indication**: In the vast majority of cases however, ART is the remaining treatment to be undertaken when all else has failed. In such cases – 65-75% of all ART procedures performed – the clinical indication for ART is relative, not absolute. The issue here is thus one of determining the urgency, or lack of, at proceeding to ART. The problematic of the urgency for IVF is summarized by the following emblematic question: "ART? Yes, but when."

- **Arbitrary decision**: In certain cases, ART is decided for non-strictly infertility-related reasons. For example, ART may be decided for genetic screening purposes: ART may be waranred for (i) ruling out the risk of transmitting a genetic disorder through pre-implantation genetic diagnosis (PGD), (ii) selecting euploid embryos in case for example of repeated miscarriages due to genetic disorder and; (iii) sex balancing in families having had ≥3 children of the same gender. Arbitrary decisions for reverting to ART also include intentions of fertility preservation. While these motives are arbitrary – i.e. the patient's desire to revert to PGD for genetic and/or fertility preservation reasons – the decision making should nonetheless take into account the over-all risk-benefit equation.

1.2 Medical and personal urgency for ART

Medical urgency for ART represents the circumstances when it is established, or simply feared (impossible to ruled out), that ART success rates might soon dwindle down because of some deteriorating process. This is typically the case when facing the signs – direct or indirect – of a premature aging process. The foresight of future ART success rates and fear of a possible downward trend are obviously assessed in the context of the natural aging process and notably, the patient's age (see decision making).

Personal urgency for ART is a complex issue rooting in all the personal factors that constitute a couple's own infertility history (see section: decision making). The factors to be taken into account include the duration of infertility, the age of the male partner and in certain cases of secondary infertility the first child's age and may include all sorts of other possible pertinent personal parameters (see sections: workup and decision making).

1.3 Choosing the COS protocol

Once the couple and his medical team have decided to proceed to ART, the practical next step is to opt for the best COS protocol amongst the following options:

Hypertext referring to the actual protocol, including its preferred indications

a. Antagonist protocol
b. Antagonist with freeze-all Dif-ET strategy
c. GnRH-a 'long' protocol
d. Poor responder *MicroFlare* protocol
e. Duplex (DPX) dual protocol
f. Minimal ART protocol
g. Natural cycle ART

General principles for selecting the most appropriate COS protocol

- Consider the OHSS risk. If the OHSS risk is high, opt for the antagonist protocol knowing – and informing the patient – that if need be hCG administration can be avoided and replaced by GnRH-a (GnRH trigger) without harming the overall ART cycle outcome. In the latter case however, a freeze all & differed ET (Dif-ET) approach is generally preferred.
- In case of poor response with low AMH and AFC scores and/or poor-insufficient ovarian response(s) in prior ART cycles, consider the MicroFlare protocol.
- In case of prior poor-insufficient response to antagonist protocols, consider the old classical long-GnRH-a protocol in women having no risk of OHSS.
- When the oocyte yield needs to me maximized over a short time interval, as for fertility preservation envisioned in cancer situation, consider the dual stimulation DPX protocol.

Bilan hormonal (FSH, LH, E2, TSH, AMH)
Echographie pelvienne

Spermogramme
Test de migration

Bilan hormonal (FSH, LH, E2, TSH, AMH)
Echographie pelvienne

Spermogramme
Test de migration

HSG

Bilan genetique

Hysteroscopie

IRM pelvienne

Laparoscopie

Bilan hormonal (FSH, LH, E2, TSH, AMH)
Echographie pelvienne

Spermogramme
Test de migration

HSG

Bilan genetique

Bilan genetique

Examen clinique

Hysteroscopie

IRM pelvienne

Bilan Echographique

Spermoculture

Laparoscopie

Bilan Hormonal