Transgenic mouse models have been developed for polycystic ovary syndrome, persistent Müllerian duct syndrome, implantation failure and several different types of embryonic lethal genotype. It is anticipated that mutations in oocyte-specific genes, leading to recurrent early embryonic lethality, will be found. This discussion will focus on the known human mutants that affect reproduction and the current practical methods to identify molecular pathology in human genomic DNA.

**Paramedical Invited Lecture 3**

Tuesday, 2 July 1996
Press Centre

16:45-17:30

139. Physiology of human fertilization

Edwards R.G.
Cambridge, UK

This lecture will describe recent studies on the study of fertilization in mammals, including humans. The various stages of fertilization, their integration and implications of ICSI will be considered. Some of the embryological and genetic implications of the new technologies will be discussed.

**Paramedical Session 3**

Tuesday, 2 July 1996
Press Centre

17:30-17:45

140. A prospective randomized study on efficacy and the side-effects of i.m. versus s.c. HMG and HCG administration in IVF

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IVF still remains a strenuous treatment from a psychological as well as a physical viewpoint. Therefore efforts to alleviate this strain should meet with approval. The s.c. instead of i.m. injection of drugs, such as GnRH analogues but also menotrophins, might make injections more acceptable to the patient and facilitate self-administration. It has been shown that s.c. injections of menotrophins are feasible, but the incidence and severity of side-effects such as erythema and swelling are often used as arguments against this route of administration. However, no proper prospective study has been undertaken to substantiate or refute this claim. Therefore we undertook a prospective randomized study on the efficacy and side-effects of HMG (Humegon®) and HCG (Pregnyl®) in 99 IVF patients (1043 HMG injections and 91 HCG injections).

Double independent randomization of the patients took place by computer-generated lists in a 3:2 ratio (s.c.:i.m.). All other treatment modalities were unaltered. End-points were clinical outcome variables such as follicle growth, oocyte yield and pregnancy rates, in addition to local or systemic side-effects such as erythema, itching, swelling, pain and haematoma. These side-effects were scored by the patients after every injection. There were no differences in clinical outcome variables, such as oestradiol concentration on the day of HCG, follicular growth, the number of oocytes, the fertilization rate, the number of embryos, clinical and ongoing pregnancy rates and the implantation rate, for HMG or HCG. There were significantly more occasions of erythema (44.6 versus 6.5%, \( P < 0.0001 \)), itching (8.1 versus 0.2%, \( P < 0.0001 \)) and swelling (15.9 versus 9.4%, \( P < 0.003 \)) after s.c. HMG administrations. However, in the vast majority of cases these were very slight and did not necessitate a change in the route of administration. Pain was experienced equally in both groups (48.7 versus 43.8%, not significant), and the difference in haematoma in favour of s.c. administration was 8.1 versus 15.3% (\( P < 0.0003 \)). The differences in HCG administration had a similar tendency: erythema (29.7 versus 7.4%), itching (2.7 versus 3.7%), swelling (13.5 versus 3.7%), pain (35.1 versus 35.2%) and haematoma (5.4 versus 16.7%). However, as the numbers were limited, these figures were not significant. Despite these findings, the vast majority of patients who were able to compare administration routes preferred the s.c. injection because of the needle size and the ease of administration. In conclusion, clinical outcome variables are similar after either the s.c. or i.m. administration of HMG or HCG. Although there are more local effects after the s.c. administration of HMG, they are so slight that they never required a change in policy. In fact, the vast majority of patients preferred s.c. administration because of the simpler procedure and the psychological effects of subjective parameters such as needle size.

17:45-18:00

141. Do patients gain weight during IVF treatment?

Winkens A., Ekhart R.E., Winkens R.A.G.1, Land J.A. and Evers J.L.H.
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Introduction: Patients undergoing IVF are presumed to gain weight. Weight gain is supposed to be connected with the number of growing follicles and the occurrence of pregnancy. However, scientific evidence for these assumptions is lacking. We monitored the weight of IVF patients during their treatment...