4th Meeting of the International Network for Young Researchers in Male Infertility

Edinburgh UK, 29th September- 1st October 2011

Organizing Committee: Michelle Welsh, Karel De Gendt, Frank Tütlemann, Alexandra Amaral, Jan-Bernd Stukenborg, Claudia Giachini, Mirja Nurmio, Martin Blomberg-Jensen and Aida Wahlgren.


Number of participants: 62 (from Austria, Belgium, Denmark, England, Finland, Germany, Italy, Netherlands, Nigeria, Poland, Portugal, Scotland, Spain, Sweden).

Presentations: 3 plenary lectures, 1 Young Research Award Lecture, 8 selected oral presentations, 30 posters, 3 workshops.

The first plenary lecture was given by Professor Philippa Saunders (Centre for Reproductive Health, University of Edinburgh, UK), and was entitled "Hormones make it happen! Sex steroids and spermatogenesis". She gave us an overview of the role of sex steroids (estrogens and androgens) in the reproductive system (particularly on spermatogenesis regulation), with emphasis on relevant outcomes obtained with distinct genetically-engineered mice models.

The second plenary lecturer was Professor Ilpo Huhtaniemi (Department of Reproductive Biology, Imperial College London, UK and Department of Physiology, University of Turku, Finland) whose talk was entitled "Function and
dysfunction of the pituitary-gonadal axis”. He told us about the role of the gonadotrophic hormones LH and FSH in the regulation of reproductive function, discussed the consequences of mutations/polymorphisms in the gonadotrophins and gonadotrophin receptor genes (both in humans and in modified mice models), and argued on the influence of these hormones in endocrine cancer.

The third plenary lecturer was Professor Andrew Wilkie (The Weatherall Institute of Molecular Medicine, University of Oxford, UK) and his presentation was about ”Paternal age effect mutations in the germline”. He made an overview on the negative effects of aging on male reproduction function, with a focus on the development of mutations in paternal germline (e.g. fibroblast growth receptor type 2 gene) and offspring pathophysiology (e.g. Apert syndrome). Furthermore, he argued that some of these mutations may propagate because they confer a selective advantage to selfish spermatogonia.

The INYRMF decided to award one outstanding young scientist every two years. Our first Young Researcher Award was awarded to Noora Kotaja (Department of Physiology, University of Turku, Finland). She gave a lecture entitled "Control of spermatogenesis by miRNAs and piRNAs”, where she first outlined the roles of small regulatory RNAs in male germ cell differentiation, and then evidenced on the involvement of the chromatoid body in miRNAs regulatory pathways.

Apart from the plenary lectures, we selected 8 participants (based on the quality of the abstracts submitted) that did short oral presentations:
- Nina Kossack (Germany): “Gene expression analysis as a tool to characterize human testicular biopsies and cell cultures for the presence of germ cells”;
- Judit Castillo (Spain): “Proteomic analysis of human sperm nuclei through liquid chromatography and tandem mass spectrometry (lc-ms/ms)”;
- Anne Jorgensen (Denmark): “Hanging drop cultures of human testis and testis cancer samples: a model to investigate effects of growth factors”;
- Ida Björkgren (Finland): “The role of Dicer in the mouse epididymis”;
- Ellen Goossens (Belgium): “Germ cells undergo typical epigenetic modifications after spermatogonial stem cell transplantation and intratesticular tissue grafting in a mouse model”;
- Ahmed Reda (Sweden): “Culture medium related effects on testosterone production of cultured rat Leydig cells in a 3D-culture system”;
- Roberto D.V.S. Morais (Netherlands): “Effects of triiodothyronine (T3) on germ and Sertoli cell proliferation in testicular explants of zebrafish (Danio rerio)”;
- Karen Kilcoyne (Scotland): “Perinatal Determinants of Adult Leydig Cell Numbers / Function: Role of Androgens and COUP-TFI”.

Finally, three workshops were given simultaneously, in different rooms:
- “Gene Expression Analysis” by Peter O’Shaughnessy (University of Glasgow, UK);
- “Spermatogenesis Staging” by Mike Millar (University of Edinburgh, UK);
- “Testis Xenografting” by Rod Mitchell (University of Edinburgh, UK).

The invited speakers made updates of their subjects, focused on technical features and applications of distinct techniques, and then participants were invited to contribute to discussion, by asking questions and sharing opinions, experiments and thoughts.