Global Andrology Forum

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Global Andrology Forum - Highlights Innovation and Surgical Excellence at SIU 2025, Edinburgh, UK

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The Global Andrology Forum (GAF) played a prominent scientific role at the **45th Congress of the Société Internationale d'Urologie (SIU 2025)** in Edinburgh by hosting two comprehensive symposia that addressed both the evolving scientific foundations of male fertility and the most complex challenges in contemporary sexual medicine. Held on **October 29 and 30, 2025**, the sessions reflected GAF's continued commitment to advancing global collaboration, translational research, and high-quality clinical practice in andrology and urology.

Hussain AlNajjar, Giovanni Colpi, Jonathan Ramsay, Germar Pinggera, Suks Minhas, Fotios Dimitriadis, Ravi Banthia (GAF Faculty - from left to right)

Giovanni Colpi (Switzerland) on left and Fotios Dimitriadis (Greece) – Chaired the GAF symposium on Day 1

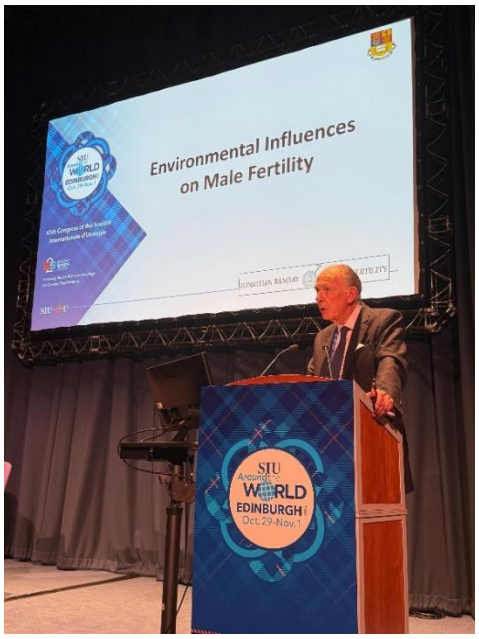
Innovative Approaches to Male Fertility and Reproductive Challenges.

Wednesday, October 29, 2025

Modern andrology is undergoing a significant transformation as advances in artificial intelligence and environmental science reshape the understanding of male reproductive health. This evolution was the central theme of the GAF symposium on Innovative Approaches to Male Fertility and Reproductive Challenges, which explored how emerging technologies and biological insights are redefining diagnostics, risk stratification, and clinical decision making. Although only a few models are available, and heterogeneity in the dataset and models hinders AI's general use and professional recommendations, clinicians and laboratorians must begin learning AI to become familiar with its applications.

Prof. Widi Atmoko, Indonesia

The session opened with a focus on integrating artificial intelligence and machine learning into andrology diagnostics. Historically, AI-assisted approaches in male reproductive health have lagged behind other medical disciplines. However, speakers emphasized the growing momentum toward standardization and objectivity in semen analysis. Conventional semen analysis remains vulnerable to inter-observer variability and manual error, whereas AI-based systems offer near real-time, reproducible, and objective assessments. Advanced platforms such as artificial intelligence optical microscopy were discussed for their high accuracy across core semen parameters, including sperm concentration, motility, and morphology. By reducing observer bias and improving diagnostic precision, AI has the potential to enhance consistency in clinical evaluation and treatment selection, as well as the reliability of diagnostic algorithms. While current limitations remain, including limited model availability and heterogeneity in training datasets, the session underscored the importance of early clinical and laboratory engagement with AI technologies to prepare for broader adoption.



Prof. Jonathan Ramsay, UK

The necessity for such interventions was further underscored by data demonstrating a profound global decline in male fertility. The symposium reviewed evidence indicating a more than 50 percent reduction in sperm concentration among Western men between 1973 and 2011. This trend was contextualized within the framework of Testicular Dysgenesis Syndrome, which

links impaired semen quality, hypospadias, cryptorchidism, and testicular cancer to a shared fetal origin. Increasing attention was drawn to the role of environmental endocrine-disrupting chemicals, including phthalates and bisphenols, which are widely present in everyday consumer products and act as androgen suppressors or estrogen mimics. Speakers noted that genetic susceptibility often modulates the clinical expression of these exposures, contributing to interindividual variability in fertility outcomes.

Complementing these discussions, the symposium addressed the emerging role of the seminal microbiome in reproductive health. Dysbiosis was presented as a recognized contributor to male infertility, with semen microbial communities typically clustering into genus-dominant profiles such as Escherichia, Staphylococcus, Streptococcus, and Enterococcus. An overrepresentation of pathobionts, including Prevotella and Pseudomonas, was associated with oligozoospermia, increased oxidative stress, and elevated sperm DNA fragmentation. In contrast, Lactobacillus species were highlighted for their potential protective effects on sperm morphology and resilience against opportunistic pathogens. Collectively, the session emphasized that integrating AI-driven diagnostics, epigenetic assessment, and microbiome evaluation represents a comprehensive and forward-looking approach to modern male reproductive care.

Prof. Suks Minhas, UK

Highlights of the GAF Hosted SIU Symposium on Complicated Penile Prosthesis Implantation.

Thursday, October 30, 2025.

The second GAF-hosted symposium focused on Complicated Penile Prosthesis Implantation and delivered a highly practical, experience-based program addressing some of the most demanding scenarios in prosthetic urology. The session brought together international experts to share contemporary strategies, technical insights, and outcome-focused approaches to complex penile prosthesis surgery. The session was chaired by **Germar-Michael Pinggera from Austria and Amarnath Rambhatla from the United States**.

Edoardo Pescatori from Italy opened the session with an overview of recent and future advances in penile prosthesis design. He highlighted how modern engineering improvements, including kink-resistant tubing, lock-out valve mechanisms, and hydrophilic and antibiotic coatings, have significantly enhanced device reliability and infection prevention. These advances were framed as particularly impactful in complex primary cases and revision surgery, where device performance and durability are critical to long term success.

Prof. Edoardo Pescatori, Italy

Prof. Hussain AlNajjar, UK

Hussain Alnajjar from the United Kingdom followed with a focused discussion on penile prosthesis implantation in Peyronie's disease. He addressed the technical challenges posed by severe corporal fibrosis and reviewed strategies to safely dilate scarred corpora using specialized instruments, including Rosello' and Uramix cavernotomes. Adjunctive surgical techniques, including plication and grafting during inflatable penile prosthesis placement, were discussed in detail, emphasizing individualized decision-making based on curvature severity, tissue quality, and patient expectations.

Asif Muneer from the United Kingdom then presented on penile prosthesis insertion following priapism, comparing acute versus delayed implantation strategies. He outlined the advantages and limitations of early intervention to prevent corporal fibrosis versus delayed placement to allow inflammation to resolve and reduce infection risk. Practical guidance on managing dense scarring and counseling patients regarding expected outcomes and complications was emphasized.

In addition, Dr. Muneer delivered a comprehensive overview of revision and salvage procedures for inflatable penile prostheses on behalf of Ateş Kadıoğlu. This presentation addressed the management of prosthesis infection, mechanical failure, and erosion, with a strong focus on contemporary salvage algorithms. Key principles included careful patient selection, meticulous surgical technique, and the judicious use of immediate salvage approaches to preserve corporal integrity and penile length while minimizing morbidity.

Overall, the symposium highlighted that successful management of complex penile prosthesis cases requires a thoughtful integration of advancing device technology, refined surgical strategies, and realistic patient counseling.

Conclusion:

Together, the two GAF symposia at SIU 2025 highlighted the breadth and depth of contemporary andrology and sexual medicine, spanning cutting-edge scientific innovation

Widi Atmoko, Giovanni Colpi, Amarnath Rambhatla, Asif Muneer, Germar Pinggera, Hussain Al-Najjar, Edoardo Pescatori (from left to right)

and highly specialized surgical practice. By integrating advances in artificial intelligence, epigenetics, environmental health, microbiome research, and prosthetic surgery, the sessions reinforced GAF's mission to translate expert knowledge into meaningful improvements in men's reproductive and sexual health worldwide.

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