ESRA AI Working Group Position Statement

Developing clinical leadership in AI for regional anaesthesia, pain medicine, and point-of-care ultrasound*

*on behalf of the European Society of Regional Anaesthesia and Pain Therapy

Artificial intelligence in regional anaesthesia

Artificial intelligence (AI) is rapidly permeating all facetsof healthcare, including monitoring, diagnostics, administration and health records, drug development, personalized medicine and robotic surgery.[1] Recent published literature shows that AI is increasingly gaining traction in the field of ultrasound guided regional anaesthesia (UGRA).[2, 3] It has proven value as a tool for the acquisition and interpretation of sonographic images, supporting the accurate location of key landmarks essential for the successful execution of peripheral nerve blocks.[4] In addition, it has shown promise as supportive educational aid, both for experts and non-experts in UGRA.[5]

Despite this progress, many potential applications relevant to the clinical practice of UGRA remain unexplored. There is growing concern that progress is being hindered by a lack of clinical leadership.[6] In the absence of strong clinician involvement, the field risks becoming dominated by technology-centric approaches that fail to capture the complexities and requirements of clinical practice. This disconnect may result in suboptimal solutions and limited adoption, ultimately hindering progress in the development of AI-based solutions and their appropriate implementation in clinical practice.

Mission Statement

The European Society of Regional Anaesthesia and Pain Therapy (ESRA) is committed to the training of anaesthesiologists, promoting education and stimulating research in UGRA,

point-of-care ultrasound (POCUS), perioperative care, and pain medicine to advance patient care in accordance with the society's core values.

Thus, ESRA have formed an AI Working Group (ESRA-AI) to cultivate leadership and expertise in the application of AI within the fields of UGRA and POCUS. We aim to provide a platform for meaningful clinician engagement, provide clinical leadership, deliver educational opportunities, undertake research and inform policy and industry positions in this field.

This initiative will serve as a collaborative forum for clinicians and researchers with a keen interest in AI–shaping the future of AI in UGRA and POCUS by fostering interdisciplinary exchange of knowledge and promoting evidence-based integration of these technologies.

Summary of ESRA AI Working Group action area

Through education, research, and strategic partnerships, the AI Working Group supports the development of AI in UGRA and POCUS that is tailored to the unique challenges of this field, while ensuring ethical use, clinical relevance, and patient-centred design.

Conferences and education

In cooperation with the Scientific Committee, Congress Organizing Committee and Education Committee, ESRA-AI will develop AI-centred sessions and workshops, delivered by keynote AI speakers and faculty. Discussions are underway to explore the possibility of dedicating sessions of a future World Day of Regional Anaesthesia and Pain Medicine to the theme of AI. The group also is committed to organizing ESRA-supported webinars, which feature expert speakers on AI from across the fields of clinical practice, academia, healthcare provider organization, healthcare technology/industry and policy. These sessions will serve to educate and promote dialogue within the ESRA community about the evolving landscape of AI in clinical practice. ESRA-AI also aim to engage with other regional anaesthesia and partner societies in AI content for their events.

Regular contribution to the ESRA Newsletter will also offer insights and updates on the latest developments. We plan to actively contribute to the development and evolution of the European Diploma in Regional Anaesthesia (ESRA-DRA) curriculum and remain open to the potential for AI-based tools to be used in examinations. Collaboration with society members and content producers will support the creation of high-quality, informative content for the ESRA website, if needed.

Research and publishing

Members of ESRA-AI will initiate AI-based studies on behalf of the society, which aim to define priorities, evaluate AI-based technologies, and explore clinical/patient attitudes to AI. Additional avenues of study could include studying the optimal integration of such tools in our clinical practice, as well as their limitations. We are committed to reviewing and contributing to AI-themed research studies seeking ESRA endorsement. In addition, the group will actively explore opportunities to engage with funding bodies and shape AI-focuses research funding calls.

A key component of the academic activity will be to develop and publish comprehensive guidelines regarding the application of Ai in UGRA and POCUS. These will highlight AI utility, safety, and best practices, providing regular updates that reflect evolving evidence.

Finally, patient–oriented research will aim to ensure that innovation remains aligned with the values and expectations of the society we serve; the group will engage in patient-facing activities, such as assessing patient views on AI.

Industry

The ESRA-AI group recognises the significant role of industry in the development and implementation of innovative technologies in healthcare. The group will engage with industry stakeholders when opportunities arise, to provide insights into the clinical needs and priorities within fields of interest, offering strategic guidance on the development of AI solutions that reflect clinical challenges.

The working group may also serve as a formal liaison between ESRA and commercial partners seeking collaboration. These sessions will facilitate open dialogue, ensure mutual understanding, and support ethical, rigorous, and evidence-based innovation – with the society maintaining a vendor neutral position, to promote and safeguard the optimal integration of such tools into our clinical practice.

ESRA scientific meetings and initiatives will be promoted to industry, encouraging responsible industry contributions to ESRA-led educational and research efforts. By building a collaborative ecosystem, members of the group aim to accelerate the responsible integration of AI into practice.

Policy

On behalf of society, and in concert with standard-setting bodies and/or healthcare provider institutions, ESRA-AI will pursue the development of consensus-driven position statements and inform regulatory policy on new technologies. These will aim to identify the opportunities and scope of such tools current clinical practice. Where appropriate, the group will also produce white papers that articulate the society's official position on key AI-related topics.

The future is now!

Together, we aim to pioneer responsible innovation—empowering healthcare professionals not only to adapt to change but to define it. We must embrace this moment of opportunity with purpose and vision. ESRA-AI invites all clinicians who share our passion for innovation to connect, collaborate, and contribute. Join us in driving forward the integration of AI in regional anaesthesia and POCUS.

References

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