IRRAflow: A new innovative fluid management system to treat intracranial bleeding

A conversation with neurosurgeon, Dr Christos Panotopoulos

IRRAflow is a new innovative fluid management system that addresses issues associated with intracranial bleeding. The system, developed by IRRA, combines periodic, controlled irrigation and aspiration of the catheter probe to control pathological fluid collection in the brain. This approach aims to improve clinical outcomes by reducing the risk of infection, inflammation, and neurological complications associated with intracranial bleeding.

**Why did you invent the IRRAflow system?**

Dr Panotopoulos: The IRRAflow system was developed to address the challenges associated with the management of pathological fluid collections in the brain. Traditional methods, such as external ventricular drainage (EVD), have limitations in terms of safety and efficacy. IRRAflow is designed to improve fluid exchange and reduce the risk of complications associated with these procedures.

**What are some of the issues that referenced earlier with historic treatment approaches?**

Dr Panotopoulos: Historically, treatment approaches for pathological fluid collections have been limited by issues such as inadequate drainage, infection, and neurological complications. These issues can lead to prolonged hospital stays, increased medical costs, and poor patient outcomes.

**How does the IRRAflow system address these issues?**

The efficiency of the fluid exchange concept for the evacuation of extracranial extracellular has been demonstrated with the IRRAflow system and its previous embodiments in more than 100 patients in Greece, India, Sweden, Germany, and Finland with subarachnoid, intraventricular, intraparenchymal, and subdural hemorrhages. In these cases, the rate of treatment was much shorter and less invasive and residual blood volumes were less than extracellular intracerebral hemorrhages (Venkataramana et al., 2012). This increased drainage efficiency can most likely be attributed to the gradual and continuous dilution of the pathological intracranial fluids by irrigating with the catheter with physiological fluids as well as the continuous minor volume fluctuations inside the pathological collection, which are created by the appropriate irrigation patterns. Both these factors are well known to everybody who has ever tried to wash anything.

**What are the potential benefits of IRRAflow compared to traditional methods like EVD?**

IRRAflow provides several advantages over traditional methods such as EVD. It is faster, more efficient, and less invasive, offering a safer and more effective way to manage pathological fluid collections in the brain. Additionally, it reduces the risk of infection and neurological complications associated with EVD.

**Conclusion**

IRRAflow represents a significant advancement in the management of pathological fluid collections in the brain. Its innovative approach offers hope for improving patient outcomes and reducing the burden on healthcare systems worldwide.

---

**References**