Commentary Article

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Enteral Nutrition Improves the Prognosis and Immune Nutritional Status

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Description

Clinicians have been paying more and more attention to nutritional therapy. Poor nutrition is linked to poor clinical outcomes, such as a longer stay in the intensive care unit and a higher risk of postoperative complications and death. Additionally, these patients require more energy than they would normally; As a result, they require nutritional assistance to expedite recovery, improve their immune system, and achieve better long-term outcomes. According to the guidelines of the American Society of Parenteral and Enteral Nutrition the European Society of Parenteral and Enteral Nutrition, and the Society of Critical Care Medicine, early application of EN is recommended for critically ill patients, particularly those who are at high nutritional risk. This is because EN can preserve the function of the intestinal barrier and enhance mucosal immunity. However, less than 10% of critically ill patients receive adequate nutrition within 72 hours of ICU admission due to obstacles like gastrointestinal intolerance and hemodynamic instability. Typically, patients undergoing cardiothoracic surgery experience systemic inflammation; additionally, underfeeding, increased catabolism, and surgical trauma all have a tendency to exacerbate their nutritional status and put them at high nutritional risk.

Nutritional Therapy

These patients also had a lower long-term survival rate and a higher mortality rate than patients at lower nutritional risk. There is a lack of evidence, particularly in the form of well-designed randomized controlled trials, regarding the advantages of EN for patients undergoing cardiothoracic surgery. Even in patients who are hemodynamically unstable and require vasopressor support, some researchers have pointed out that EN is feasible and safe, potentially lowering mortality rates and postoperative complications. However, it is unknown whether EN has an effect on short- and long-term survival for CSRU patients. However, a number of studies suggest that EN may have no effect at all on clinical outcomes for patients at low nutritional risk. Based on these findings, we came to the conclusion that EN therapy would only be beneficial to some specific groups. In addition, we hypothesized that by improving patients' nutritional and immune status, EN would improve their prognosis. We wanted to find out if EN had a positive effect on short- and long-term outcomes for patients in the CSRU and which characteristics of that population would make them more likely to benefit from EN in this study. The rapid and significant technological advancements made by humans over the course of the previous ten years have undoubtedly influenced the manner in which surgical procedures are carried out in the operating room.

By taking into account a variety of data sources, including patient health conditions, disease natural history, patient values, and financial information, AI is rapidly gaining a significant foothold in surgical decision-making. Despite the rapid expansion of its use in healthcare settings, artificial intelligence's mainstream application in clinical practice remains limited. In thoracic surgery, machine learning algorithms are used extensively, including at various clinical stages. AI may play a crucial role in diagnostic augmentation, operative management, pre- and post-surgical patient management, and upholding safety standards by utilizing methods like machine learning, computer vision, and robotics. Artificial intelligence has the potential to significantly assist surgeons in performing more complex surgeries, such as cardiothoracic surgery, with greater success, fewer complications, and patient safety while also providing resources for robust research and improved knowledge dissemination.

Systemic Inflammation

An overview of AI applications in thoracic surgery and its components, including current projects and technology that use AI in cardiothoracic surgery and general care, are presented in this paper. We also talked about AI's future and how high-tech operating rooms will use human-machine collaboration to improve performance and patient safety. Surgeons need to stay up to date on the most recent AI technology developments in order to comprehend and easily incorporate it into clinical practice when it becomes available. In order to keep practicing and aspiring surgeons informed about the most recent developments in AI and cardiothoracic surgery, this review is an excellent addition to the literature. The study of algorithms that give a machine the ability to reason and assist it in performing cognitive tasks like problem solving, decision-making, and word recognition is known as artificial intelligence. AI has emerged as the central theme of both popular and academic writing as a result of the technological revolution. There is a shift in

productivity similar to that of the industrial revolution in today's world, where data is crucial and technology is a major force driving change. AI in surgery has a bright future and stands to benefit from this technological development as well. In surgery, machine learning, natural language processing, artificial neural networks, and computer vision are the four core subfields of AI. Because we are accustomed to human learning and machines as operators under human command, machine-learning may initially appear to the reader to be very unintuitive.

Essentially, machine learning identifies patterns in huge amounts of data that may not be apparent to the human eye, labels the data, and makes precise predictions. The ability of ML to accurately predict surgical site infections and lung cancer staging outperforms approaches based on clinical guidelines to unprecedented levels thought to be unattainable with conventional statistics demonstrates the role ML plays in surgery. A subfield of artificial intelligence known as natural language processing places an emphasis on the computer's capacity to not only comprehend human speech but also to deduce meaning and emotions from unstructured data. NLP has been able to identify phrases in operative reports that predicted anastomotic leaks following colorectal resection surgeries in surgical patients with 100% sensitivity.