Will dietary feeding of fatty acids to patients in an intensive care unit who have acute respiratory distress syndrome (ARDS) affect their length of stay and hospital mortality?

Primary Investigator:
Elamin M. Elamin, M.D.
Funding Agency:
Memorial Medical Center Foundation

Severe lung inflammation and failure are usually a part of generalized body infection. This carries an increased risk of death, secondary to other organ failure. The use of tube-feeding formula fortified with certain immune-promoting additives may improve the body response to such infections.

In this study, Dr. Elamin will use a new tube-feeding formula in critically ill adult patients with a pulmonary inflammation who are on respirators, to try to improve their responses to inflammation and infection.

Dr. Elamin hypothesizes that this will translate to fewer days in the intensive care unit and a decrease in overall death from severe lung failure.

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Novel marker cells in opsoclonus-myoclonus syndrome

Primary Investigator:
Michael R. Pranzatelli, M.D.
Funding agency:
American Medical Association Research and Education Foundation and Children's Miracle Network

Opsoclonus-myoclonus syndrome is an indirect consequence of neuroblastoma, or malignant tumor, in which a once-normal toddler can no longer sit, stand, walk or speak. Other symptoms include rapid, irregular, nonrhythmic movements of the eyes in horizontal and vertical directions (opsoclonus) and muscle spasms (myoclonus). Any organ in the body is a potential target, and removal of the cancerous tumor does not stop the syndrome.

Michael R. Pranzatelli, M.D., and Elizabeth D. Tate, FNP-C, MN, established a national center for this disorder and recruited 180 families.

Recently they discovered marker cells in the spinal fluid of children with opsoclonus-myoclonus. In collaboration with Anna Travelstead and Dr. Edward Moticka of the SIU Flow Cytometry Facility, they have identified several types of inflammatory immune cells years after diagnosis.

They propose that failure to eradicate inflammatory cells accounts for neurological relapses and long-term conditions, such as behavior and mood disorders, and mental retardation.

The new marker cells will allow the development of innovative, more effective treatment strategies.

Collaborations with other researchers at SIU include immunologists Dr. Rita Trammell and Dr. Teresa Jewett, and pharmacologists Dr. Amy Arai and Dr. Markus Kessler.

Dr. Pranzatelli's work will be presented at a scientific session of the Child Neurology Society national meeting in the fall. For more information, see www.omsusa.org.

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Evaluating the clinical performance of the AcuMatch hip prosthesis

Primary Investigator:
D. Gordon Allan, M.D.
Funding Agency: Exactech®

While the outcomes of primary total hip replacement usually are excellent, the orthopaedic surgeon may face many challenges. In patients with an atypically-shaped thigh bone, severe bone loss, or a prior total hip replacement, it may be difficult to "properly fit" the artificial hip, also known as a hip prosthesis.

Most hip prostheses are comprised of a single component. A modular hip prosthesis, however, contains three different components, allowing the surgeon to custom fit the hip replacement to each individual patient; this may greatly impact the clinical performance of the hip replacement.

Dr. Allan, who specializes in adult reconstruction of the hip and knee, was a member of the design team that developed a modular hip prosthesis known as the AcuMatch M-Series (Exactech®, Gainesville, FL).

A major advantage of the system is that relatively few components can be combined into more than 50,000 different configurations to provide a custom fit to the bone. The unique three-piece stem gives surgeons a wide range of options to address the challenges of total hip replacement, such as bone loss, maintaining proper leg length and enhancing joint stability.

Dr. Allan currently is evaluating the clinical performance of the AcuMatch hip prosthesis. He has implanted the AcuMatch hip into 174 patients, 74 of whom received the hip prosthesis more than one year ago.

Good to excellent results have been obtained in 95 percent of those patients at one-year follow-up with few complications. If, as expected, longer-term follow-up verifies these encouraging early results, this product will provide significant advances in hip reconstruction surgery by allowing customized fitting of hip components in the operating room.

For more information about these projects, contact the Office of Research and Faculty Affairs at 217-545-7936.