Title of Presentation: Cognitive Deficits After Anesthesia: From Mechanisms to Clinical Practice

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Learning Objectives: (minimum of 2):

- Discuss most recent evidence with respect to mechanisms of anesthesia.
- Discuss the cause of desired memory loss and undesired persistent memory deficits.
- Discuss the future directions and clinical implications of recent preclinical discoveries.

Background:

Cognitive deficits that persist long after anesthesia and surgery occur in an alarming number of patients. Postoperative cognitive dysfunction (POCD) refers to the deterioration in cognition after anesthesia and surgery that is present in about one-third of patients at the time of hospital discharge and in about one-tenth of patients at 3 months after surgery. POCD is associated with poor outcomes, including reduced quality of life, premature retirement, increased dependence on social assistance and a higher mortality rate. Memory deficits are the most common feature of POCD, and studies of laboratory animals have suggested that anesthetics are a major contributing cause. Given the millions of patients who are treated with anesthetics each year, and the high incidence of POCD, it is essential to understand the underlying mechanisms and develop strategies to reduce harm. The purpose of the lecture is to provide a review of the clinical problem, present results from preclinical studies that suggest a cause, and summarize mitigating strategies.

Major Teaching Points (minimum of 3):

1. Review the incidence and consequences of POCD.
2. Summarize results from preclinical studies that have identified contributing factors.
3. Discuss strategies to mitigate against POCD.

Potential Clinical Implications:

Given our recent findings, POCD is not an unexpected consequence of anesthesia. Practical strategies to reduce the incidence will be presented.

Future Areas of Research (suggest at least 2):

New diagnostic and therapeutic strategies will be discussed.
Key References / Further Reading (no more than 10 – please see sample document for proper examples):


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