Protocol

Anesthesia Exposure and Risk of Dementia in Femur Surgery: A retrospective Study based on OMOP-CDM

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# OBJECTIVES:

To evaluate the associations between general and regional anesthesia and dementia or Alzheimer's disease (AD) risk using OMOP-CDM.

# OBJECTIVES:

To evaluate the associations between general and regional anesthesia and dementia or Alzheimer's disease

# DESIGN: Observational Cohort study.

# RATIONALE:

Several Studies have demonstrated conflicting results in surgical patients between anesthesia exposure and dementia risk1. A concern is post-operative cognitive decline (POCD), which may occur in up to 80% of patients following cardiac surgeries and 26% of non-cardiac surgeries2. There is a result that POCD may increase risk for dementia. Some human studies of the association between anesthesia and dementia have not consistently shoewed findings from animal studies1. Some animal and molecular studies support this result by showing association between anesthesia exposure and AD pathogenesis1,3-8.

Using data from OMOP-CDM cohort, we will evaluate an associations between anesthesia exposure and incident dementia.

# PARTICIPANTS:

A cohort aged 60 and older and free of dementia at baseline.

# COHORTS:

A cohort aged 60 and older and free of dementia at baseline.

1. Target Cohort (T) : General Anesthesia in Femur surgery
2. Comparator Cohort 1 (C) : Regional Anesthesia in Femur surgery
3. Comparator Cohort 2 (C) : patients not underwent surgery
4. Negative Control (NC) : Acute appendicitis or Hemorrhoids
5. Outcome Cohort (O) : Dementia or with anti-dementia drug

In DataThon :

|  |  |
| --- | --- |
| **Cohort** | **Sample size** |
| Target Cohort (T) | 659/14695(4.48) |
| Comparator Cohort 1 (C) | 1709/28670(5.96%) |
| Comparator Cohort 2 (C) | 343921/343921(100%) |
| Outcome Cohort (O) | 11797/11797(100%) |

# TIME at RISK:

90days

# STATISTICAL ANALYSIS :

Cox proportional hazards models will be used to estimate hazard ratios (HRs) and 95% confidence intervals (CIs) for dementia and AD associated with time-varying lifetime and anesthesia exposures.

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