

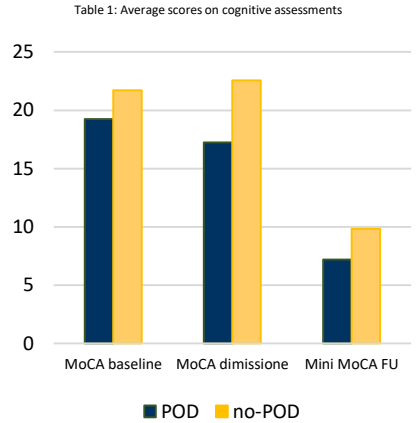
Postoperative delirium (POD): preliminary results of risk assessment of the occurrence of POD in patients undergoing hip fracture surgery

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Aims: Hip fracture (HF) represents one of the main causes of hospitalization and disability in the geriatric population, which may trigger the development or worsening of a cognitive-behavioral deficit, known as postoperative cognitive dysfunction (POCD). The aims of this study are to examine the incidence of postoperative delirium (POD) in older adults undergoing hip-fracture surgery without documented dementia, identify risk factors, and describe clinical and cognitive outcomes up to six months.

Materials and Methods: This single-center observational study enrolled 270 patients aged ≥65 years (ASA I-IV) in Italy between May 2021 and January 2024. All participants underwent hip-fracture repair and had no prior diagnosis of dementia. POD was assessed using the Confusion Assessment Method for the Intensive Care Unit (CAM-ICU) from surgery completion until day 5 of hospitalization or discharge. Data collected included demographics, fracture type, anaesthetic technique, complications, and mortality. POCD was measured with the Montreal Cognitive Assessment (MoCA) pre-operatively and at discharge, and the 5-Minute Mini MoCA test, assessed by telephone, at 6 months. Independent predictors of POD were identified using multivariable Cox regression.



Discussion: The observed 9% POD incidence is lower than reported rates (15-25%), likely reflecting modern perioperative protocols. Postoperative complications significantly contributed to delirium, supporting a role for systemic inflammation and metabolic stress. Persistent cognitive decline at 6 months, evident in over half of followed patients, highlights the potential long-term impact of POD or surgery itself.

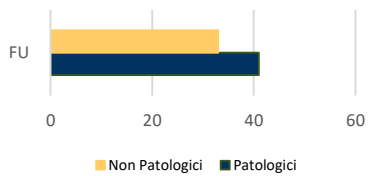
Image 1: Timeline of the administered questionnaires



*CAM-ICU administered on the day of surgery, and on postoperative days 1 to 5 or until discharge, whichever came first
 **MoCA: 5 or at the time of hospital discharge, whichever came first
 † preoperatively, on the day of surgery, and postoperative days 1 to 5 or until discharge, whichever came first

Results: The cohort (median age 81; 80% women) had 51% pertrochanteric and 49% femoral-neck fractures, with 57% receiving spinal anaesthesia. POD occurred in 25 patients (9%; mean age 85; 20 women), with postoperative complications being the sole independent predictor (P<0.001). Length of stay was 7 days (IQR 6-11), with no difference between those with and without POD. In-hospital complications affected 12% of patients, mainly respiratory infections and cardiovascular events. Mortality was 0.7% at 30 days and 6% at 90 days. Of the 74 patients with six-month follow-up, 55% scored ≤11 on the Mini-MoCA at follow-up, indicating cognitive decline; baseline MoCA suggested pre-existing subtle deficits despite the absence of a formal dementia diagnosis.

Table 2: Percentage of patients with a pathological score in the Mini-MoCA at Follow-up



Conclusions: Postoperative complications are key predictors of delirium in older adults undergoing hip-fracture repair. Comprehensive hospital pathways addressing complications, cognitive monitoring, and caregiver support are essential to mitigate the effects of POD and POCD on recovery and quality of life.

References:

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