

Iatrogenic Disability in Elderly Patients during Hospitalization in a Large University Hospital.

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BACKGROUND and RESEARCH QUESTIONS :

Background :

In older patients, hospitalization is often associated with new or worsening disability. This hospitalization-associated disability may be partly explained by the cumulative effect of aging, frailty, comorbidities and illness but results also from health care management and hospital environment. The part of the disability associated with hospital environment and management may be defined as "Iatrogenic Disability".

Research questions :

- 1) The first objective is to determine the frequency of disability induced by the processes of care or "iatrogenic disability" (ID). (Results)
- 2) The secondary objective is to determine if a standardized intervention specifically designed for elderly patients can decrease the incidence of hospitalization-associated disability and iatrogenic disability during an hospitalization. (Perspectives)

Preventable Iatrogenic Disability in Elderly Patients during hospitalization.

Methods :

Study population: Participants were 503 patients, aged 75 years and older, hospitalized in the 105 medical and surgical units of Toulouse University Hospital, for more than 2 days. **Hospitalization-associated disability (HAD)** was defined as a loss of 0.5 points or more in the Katz Activity of Daily Living Score, between the time of hospital admission and discharge. **Iatrogenic disability** was defined as the functional consequence of one or several iatrogenic adverse events (IAE) occurring during hospitalization. The IAEs are any unintended injury or complication that result more from health care management issues rather than the underlying disease process. IAE may be preventable or non preventable. **To rate "hospitalization-associated disability" as ID**, an expert panel in geriatrics medicine reviewed each medical chart using a standardized record review. They identified the precipitating IAEs and the preventability of ID.

Results :

- Mean age of the patients was 84.1 years (SD=5.7). The main diagnoses at admission were cardiovascular disease (18.1%), infection (14.3%), stroke and neurological disease (12.3%), and falls and their consequences (12.3%). Over half of the patients (52.6%) were admitted through the Emergency Department.
- Prevalence of iatrogenic disability was 11.9% (95% IC, 9.2 to 15.1%).
- ID is considered preventable in 81.9% (95% IC, 69.6% to 90.5%) of cases.
- ID is often the consequence of many health care management issues .
- Low mobilization (by lack of physical therapist intervention (71.4% of all IAE) or excessive bed rest (25,0%)), overuse of diapers (47.3%), complication of urinary catheterization (30.0%) were the main health care management issues identified.

Health care management issues and iatrogenic events leading to preventable iatrogenic disability (n=49)

| Type of Iatrogenic Events | Principal Health Care Management issues identified | Patients with preventable iatrogenic disability |
|---|---|---|
| Surgery-related | Anesthesia-related, infection | 3 (6.1 %) |
| Diagnosis-related | Missed diagnosis, Inappropriate diagnosis | 7 (14.2 %) |
| Drug-related | Inappropriate medication choice Adverse drug reaction Inappropriate medication dose | 7 (14.2 %) 12 (24.5%) 2 (4.1%) |
| Procedure complications | | |
| Urinary Catheters | | |
| New onset urinary incontinence | Indwelling urinary catheterization without specific medical indication | 11 (22.4%) |
| | Iatrogenic acute urinary retention | 2 (4.1%) |
| Infection | Repeated urinary catheterization, Technical issue | 2 (4.1%) |
| Other (intravenous line, ...) | Inappropriate maintenance, technical issue. | 3 (6.1%) |
| Falls / Fracture | Failure to identify at-risk patients and to undertake prophylactic measures. | 4 (8.2 %) |
| Nosocomial infection | Prophylactic measures? | 6 (12.2 %) |
| Ward Management | | |
| Immobility-related complications : | | |
| Loss of mobility | Excessive bed rest/ lack of mobilization by the nursing staff | 13 (26.5 %) |
| | Lack of physical therapist assessment and intervention | 27 (55.1 %) |
| | Lack of pain assessment and treatment | 3 (6.1 %) |
| | Use of restraints | 9 (18.4%) |
| | Understimulation for dressing or bathing | 10 (20.4 %) |
| Pressure ulcers | Failure to identify at-risk patients and to undertake prophylactic measures. | 2 (4.1 %) |
| New onset urinary incontinence | Overuse of diapers | 24 (49.0 %) |
| Nutritional-related complications | Lack of nutritional assessment and intervention | 6 (12.2 %) |
| Other complications | Insufficient/ inadequate nursing documentation or monitoring | 7 (14.2 %) |
| | No protocol/ failure to implement protocol, | 6 (12.2 %) |
| Discharge-related | Failure to anticipate discharge. | 2 (4.1 %) |

Perspectives : PREvention of hospitalisation-associated Disability in Elderly patients. (PHRC-N PRIDE submitted)

Objective :

To assess the effectiveness of a standardized intervention specifically designed for elderly patients, compared with usual care, in decreasing the incidence of hospitalisation-associated disability at discharge, in adults aged 75 or more admitted to hospital.

Design :

Multicentre cluster randomized controlled trial (the hospital unit is the unit of randomization) with blinded assessment of outcomes. The randomization will be stratified on the hospital and on the type of hospital unit (medical geriatric unit, medical non-geriatric unit and surgical unit).

Study population : 2268 patients to be included (in 120 units in 4 hospitals).

Intervention :

- an initial educational program and training in geriatrics for each medical and nursing staff
- Identification of 2 to 3 referent nurses (DPRN Disability Prevention Referent Nurse) in each unit, who will attend an additional training in geriatrics
- minimal comprehensive geriatric assessment (mini-CGA) at patient's admission by unit staff ; identification of health care management issues and high risk situation using a screening tool and implementation of targeted protocols focused on these high risk situations
- support of a twice-weekly round of the Geriatric Mobile Unit and daily contact with the Geriatric Mobile Unit Nurse (GMU Nurse)

Original publication :

Sourdet S, Lafont C, Rolland Y, Nourhashemi F, Andrieu S, Vellas B. *Preventable Iatrogenic Disability in Elderly Patients during hospitalization.* (Under Review Plos One).