PALERMO 5-7 Ottobre
XXVIII CONGRESSO NAZIONALE

European Society of Regional Anaesthesia & Pain Therapy
ESRA ITALIA

CRITICITÀ NEL PAZIENTE FRAGILE

Fabrizio Fattorini
«Sapienza» Università di Roma

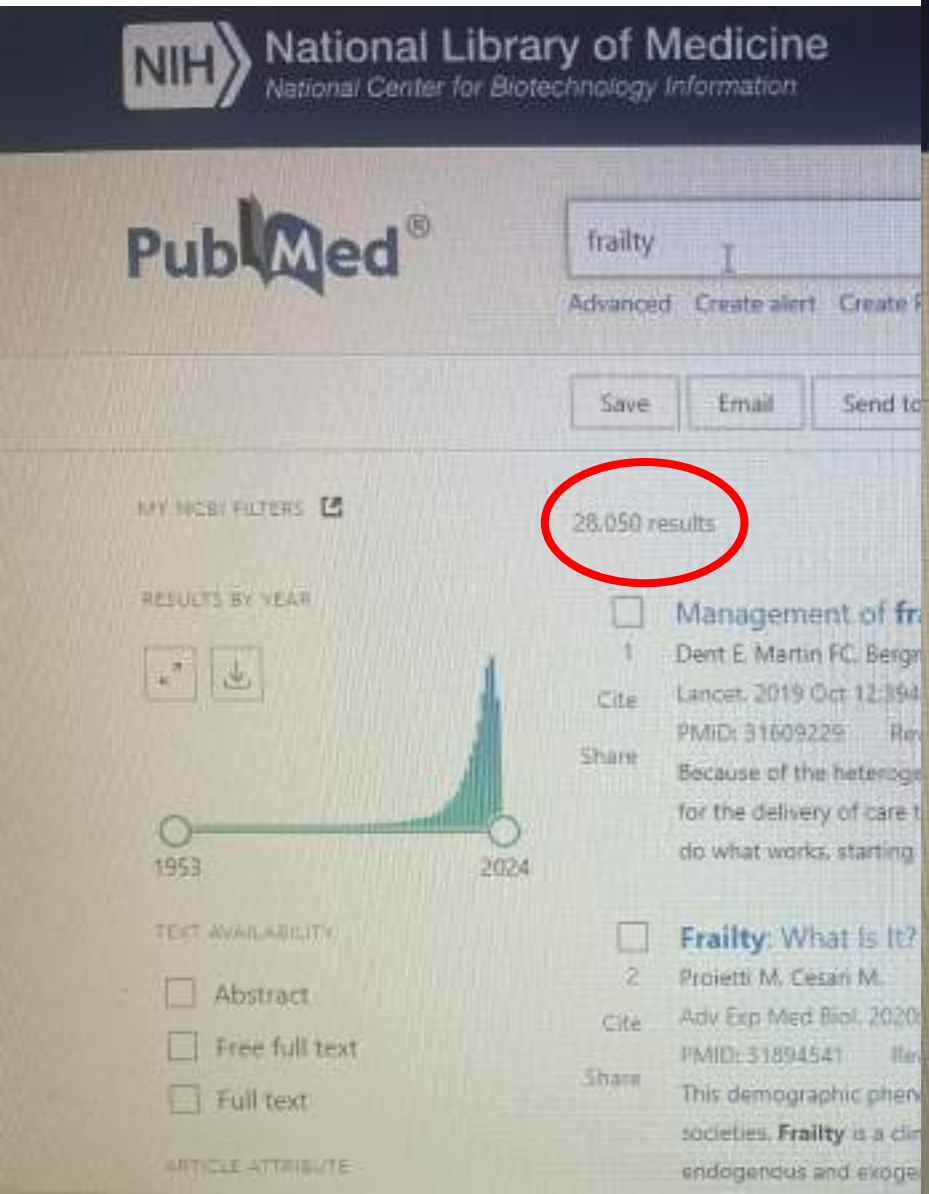
"Frailty is a progressive physiological decline in multiple organ systems marked by loss of function, loss of physiological reserve and increased vulnerability to disease and death"

,

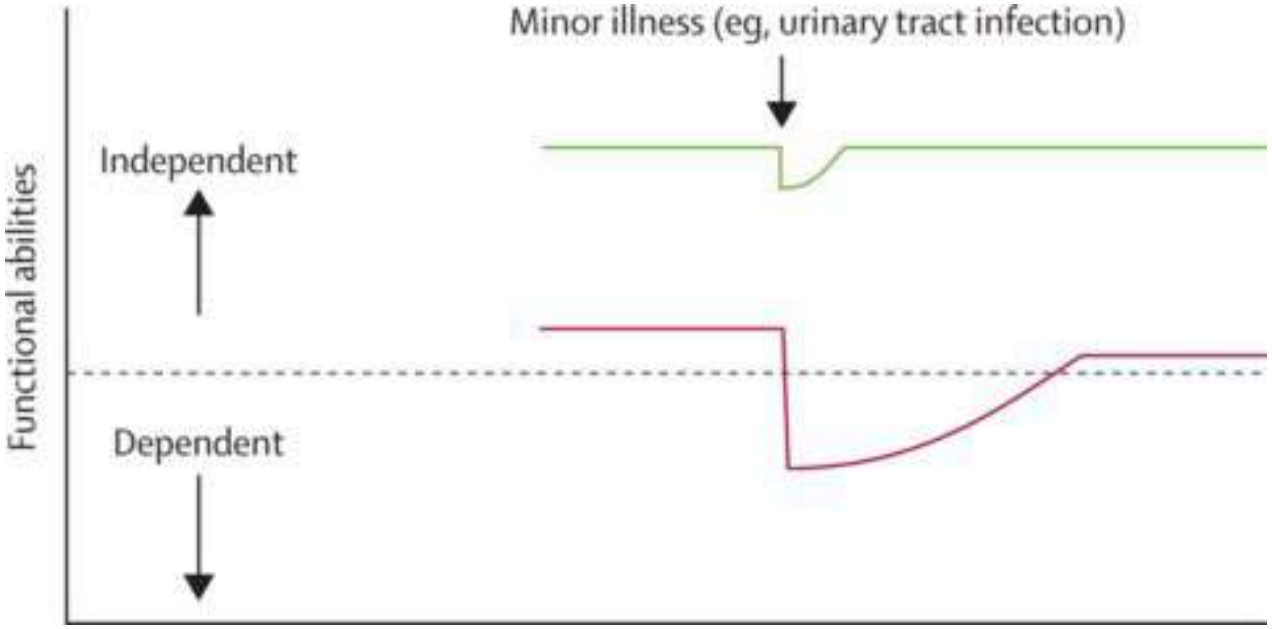
ROYAL COLLEGE of PHYSICIANS of EDINBURGH

P Moorhouse, K Rockwood
J R Coll Physicians Edinb 2012

Frailty: is it important?

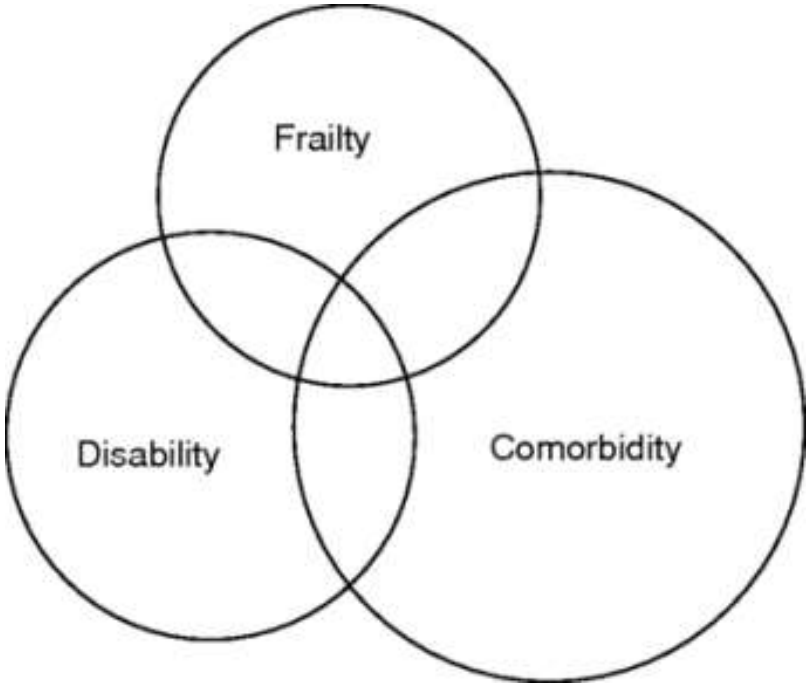


"Frailty is the most problematic expression of population ageing. It is a state of vulnerability to poor resolution of homoeostasis after a minor stressor event and is a consequence of cumulative decline in many physiological systems during a lifetime"



Vulnerability of frail older people to a sudden change in health status following a minor illness. The green line represents a fit older person who, following a minor stress such as an infection, experiences a relatively small deterioration in function and then returns to homeostasis. The red line represents a frail older person who, following a similar stress, experiences a larger deterioration which may manifest as functional dependency and who does not return to baseline homeostasis. Key: UTI: Urinary tract infection

A. *Clegg et al. "Frailty in older people", Lancet 2013*



- **There is sometimes confusion between three concepts; multi-morbidity, frailty, and disability**
- **The frailty syndrome is a collection of symptoms or markers, primarily due to the aging-related loss and dysfunction of skeletal muscle and bone, that place older adults at increased levels of risk for disability, dependency, falls, need for long term care, and mortality**
- **The normal aging process and presence of multiple chronic medical disorders can contribute to increased physical decline**
- **Frail health can be found in people of any age, but it is most commonly linked with the elderly (>65 y)**

Lolita S. Nidadavolu et al.» Preoperative Evaluation of the Frail Patient". Anesth Analg. 2020 June

PREVALENCE AND INCIDENCE

- ***"Approximately 1 in 6 community-dwelling individuals >60 years may be frail, representing a significant portion of older individuals presenting for surgery***
- ***Frail patients were more likely to have adverse outcomes including more postoperative complications, increased length of stay (LOS), and higher 30-day readmission rates***
- ***Other studies showed that higher frailty scores were associated with higher risk of postoperative 30-day mortality after adjusting for age and ASA classification***
- ***These studies demonstrate the importance of identifying frail older individuals who are planned for elective and emergent surgeries"***

Preoperative Evaluation of the Frail Patient

Lolita S. Nidadavolu, MD, PhD,* April L. Ehrlich, MD,* Frederick E. Sieber, MD,† and Esther S. Oh, MD, PhD*‡§||

www.anesthesia-analgesia June 2020 • Volume 130 • Number 6

How to assess frailty? Be careful!

- Consider assessing frailty in people with multimorbidity
- Be cautious about assessing frailty in a person who is acutely unwell
- Do not use a physical performance tool to assess frailty in a person who is acutely unwell

"Multimorbidity: clinical assessment and management NICE guideline", Published: 21 September 2016

FRAILTY SCREENING

FRIED'S Index

Frailty criteria
Weight loss
Exhaustion
Weakness
Slowness
Low physical activity level
Frailty

Frailty Domains
Changes in everyday activity
Head and neck problems
Poor muscle tone in neck
Bradykinesia, facial
Problems getting dressed
Problems with bathing
Problems with grooming
Urinary incontinence
Problems with toileting
Bulk difficulties
Rectal problem
Gastrointestinal problems
Problems cooking
Sucking problems
Problem going out alone
Impaired mobility
Musculoskeletal problems
Bradykinesia of the limbs
Poor tone in limbs
Poor trunk coordination trunk
Poor standing posture
Irregular gait pattern
Falls

ROCKWOOD'S

FRAILTY SCORE: OPER

Criteria	Definition
Shrinkage	
Weakness	Decrease
Exhaustion	Self-reporte
Low physical activity	Low weekl
Slowness	Slow

Interpretation of the Fr e

The patient receives 1 poin n criterion

0–1 = Not Frail
2–3 = Intermediate Frail (Pre-frail)
4–5 = Frail

Frail patients are at mu r risk of

Intermediate frail patients are at elevat at more than double the risk of becomi

See **Appendix III** for a more detailed descrip

ACS Frailty Score

FRAILTY SCORE[11,12]
PATIENT RECEIVES ONE POINT FOR EACH CRITERION (0–5)

Frailty Criteria	Definition
Weight loss	Unintentional weight loss ≥10 pounds in the past year.
Decreased grip strength (Weakness)	Grip strength in the lowest 20th percentile by gender and BMI. Three trials ar performed with a hand-held dynamometer and the average value is used.

Men		Women	
BMI	Kg Force	BMI	Kg Force
≤24	≤29	≤23	≤17
24.1–26	≤30	23.1–26	≤17.3
26.1–28	≤30	26.1–29	≤18
>28	≤32	>29	≤21

Exhaustion	For the following two statements: • "I felt that everything I did was an effort." • "I could not get going" The patient is asked "How often in the last week did you feel this way?" 0 = rarely or none of the time (<1 day) 1 = some or a little of the time (1–2 days) 2 = a moderate amount of the time (3–4 days) 3 = most of the time The criterion is met if patient answers 2 or 3 to either statement.
Low physical activity	Weekly energy expenditure, determined with the short version of the Minnes Leisure Time Activities Questionnaire (see Taylor et al.[13]) in the lowest 20th percentile by gender: **Men:** <383 kcal/week. **Women:** <270 kcal/week.
Slowed walking speed	Walking speed in the lowest 20th percentile by gender and height. Time is measured for a distance of 15 feet at normal pace. The average of three trials i used.

Men		Women	
Height	Time	Height	Time
≤173 cm	≥7 sec	≤159 cm	≥7 sec
>173 cm	≥6 sec	>159 cm	≥6 sec

Is frailty amenable to prevention and treatment?

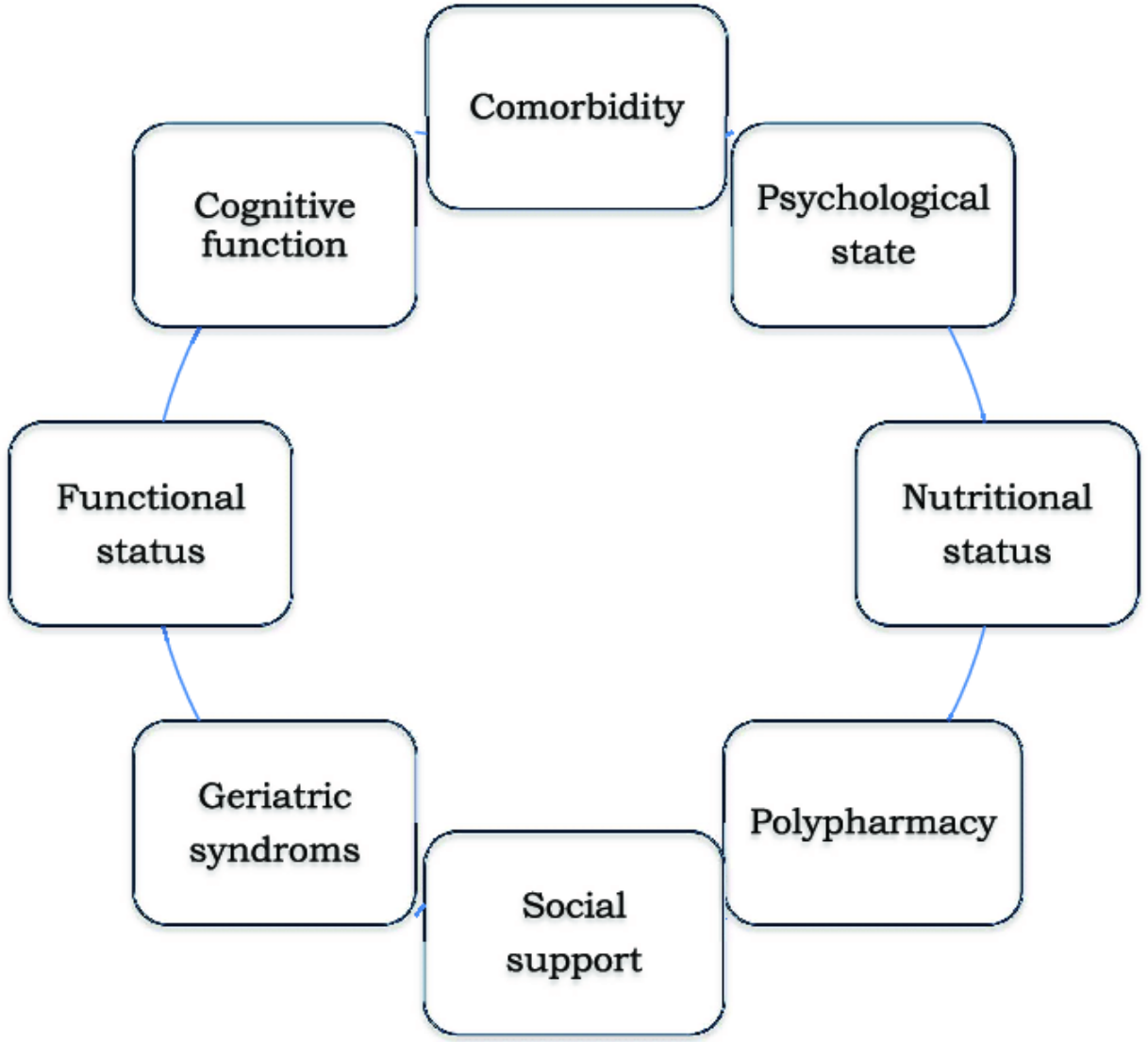
- Good nutrition
- Not too much alcohol
- Staying physically active
- Remaining engaged in local community/avoiding loneliness

FRAILTY AND SURGERY: THE ROLE OF PREHABILITATION

- **Any preoperative condition that prevents a patient from tolerating the physiological stress of surgery (e.g., poor cardiopulmonary reserve, sarcopenia), impairs the stress response (e.g., malnutrition, frailty), and/or augments the catabolic response to stress (e.g., insulin resistance) is a risk factor for poor surgical outcomes**
- **Prehabilitation programs aim to prepare patients physically and emotionally to withstand the stress of surgery**

Carli F, Gillis C, Scheede-Bergdahl C. «Promoting a culture of prehabilitation for the surgical cancer patient". Acta Oncol, 2017

Prehabilitation requires a team of doctors, nurses, and therapists to jointly establish a patient's matrix of bio-psycho-social needs



Clegg, A. et al. "Frailty in elderly people". Lancet, 2013

SIGNS/SYMPTOMS

- Weight loss
- Fatigue
- Low activity, social withdrawal
- Muscle weakness (sarcopenia)
- Slow or unsteady gait
- Cognitive impairment

FALLS

TRAUMA (fractures)

COMMON MEDICAL DISORDERS THAT CONTRIBUTE TO FRAILTY

- Hypertension
- Coronary artery disease
- Asthma
- Pneumonia
- Arthritis
- Osteoporosis
- Diabetes
- Malnutrition
- Cancer
- Anemia
- Alzheimer disease
- Cataracts
- Hearing disorders
- Anxiety
- Depression

ASSOCIATED FEATURES OF FRAILTY

- Older age
- Female
- Less education
- Lower income
- Poorer health (multiple co-morbid cronic diseases)

- *"Our main objective was to examine the association between frailty and mortality, between frailty and length of hospital stay (LOS) and frailty and readmission within 30 days in the emergency surgical population.*
- *At the end of the selection process 21 eligible studies with total 562.070 participants from 8 countries were included in the qualitative and the quantitative synthesis*
- *Although frailty is present in the younger age group, the majority of patients who are living with frailty are older than 65 years. Patients living with frailty have higher chance of dying within 30 days after an emergency surgical admission, tendency of increased LOS increased chance of 30-day readmission after discharge"*

Frailty and Emergency Surgery: Results of a Systematic Review and Meta-Analysis

Tamas Leiner[1,2], David Nemeth[1], Peter Hegyi[1,3,4], Klementina Ocskay[1,2], Marcell Virag[1,5,6], Szabolcs Kiss[1,5], Mate Rottler[1,5,6], Matyas Vajda[1,5], Alex Varadi[1] and Zsolt Molnar[1,3,7]*

frontiers in Medicine

SYSTEMATIC REVIEW
published: 31 March 2022
doi: 10.3389/fmed.2022.811524

- *“Background: The association of frailty on postoperative outcomes after elective and emergency general surgery procedures has been widely studied. However, this association has not been examined in the geriatric population stratified by emergency general surgery procedural risk*
- *Methods: Study of 16,911 low risk procedure emergency general surgery performed using the 2012 to 2017*
- *Increasing levels of frailty in geriatric emergency general surgery patients are associated with higher levels of postoperative complications, failure-to-rescue, and readmission. Clinicians should consider frailty in assessing the risk of even low-risk surgeries in this population”*


Surgery 173 (2023) 485–491

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Surgery

journal homepage: www.elsevier.com/locate/surg

ELSEVIER

Frailty in emergency general surgery: Low-risk procedures pose similar risk as high-risk procedures for frail patients

Courtney E. Collins, MD, MS, FACS[a,*], Savannah Renshaw, MPH, MPA[a], Mahsa Adib, BS[a], Anand Gupta, MPH, MBBS[a], Ronnie Rosenthal, MD, FACS[b]

Key Points

Question Is level of procedural risk associated with frailty and mortality in emergency general surgery patients?

Findings In this cross-sectional study of 882 929 emergency general surgery admissions, frailty was significantly associated with mortality. After stratified analysis, this association remained significant for high-risk procedures, and it was even greater within low-risk procedures.

Meaning Procedural risk level is associated with frailty and mortality in emergency general surgery patients, and preoperative frailty assessment should be strongly considered even within low-risk procedures.

Research

JAMA Surgery | Original Investigation | PACIFIC COAST SURGICAL ASSOCIATION

Association of Frailty With Morbidity and Mortality in Emergency General Surgery by Procedural Risk Level

Manuel Castillo-Angeles, MD, MPH; Zara Cooper, MD, MSc; Molly P. Jarman, PhD; Daniel Sturgeon, MS; Ali Salim, MD; Joaquim M. Havens, MD

JAMA Surg. 2021;156(1):68-74. doi:10.1001/jamasurg.2020.5397
Published online November 25, 2020.

Conclusions

This study showed that frailty was significantly associated with mortality in patients undergoing EGS, with an even greater association in low-risk procedures. Preoperative frailty assessment is imperative even in low-risk procedures. Further studies should focus on identifying areas of improvement to provide better care for this frail population undergoing EGS.

- *"A systematic, electronic search for relevant publications was performed in November 2019 using Pubmed and Embase from 2009 to 2019. The latest search for articles was performed on February 16th, 2020. Articles were excluded if frailty was not measured using a frailty tool, or if patients did not undergo emergency general surgery (EGS).*
- *The primary outcome of this review was all-cause mortality amongst the frail undergoing EGS at 30 days. The secondary outcomes were the prevalence of frailty, discharge location and length of stay. Post-operative mortality was defined as death within 30 days after surgery"*
- *"This systematic review has shown that frailty is associated with an increased mortality risk when compared with the non-frail. This systematic review and meta-analysis has several clinical and research implications. Frailty scoring should be an integral part of acute surgical practice, to aid decision-making and peri-operative care"*

THE SURGEON 20 (2022) E307–E314

Frailty and emergency abdominal surgery: A systematic review and meta-analysis

Czara Annamaria Kennedy [a,*], *David Shipway* [b,c], *Kevin Barry* [d,e]

Table 2 – Frailty scoring systems used.

Author	Frailty Tool	Number of Components
Jokar	EGS-specific frailty index (EGSFI)	15
Joseph	Rockwood Frailty Index	40
Goeteyn	7 Point Canadian Study of Health and Ageing Frailty Scale	70
Kenig	Geriatric 8 (G8)	8
Parmar	Clinical Frailty Score (CFS)	7
Lee	Claims based frailty index (CFI)	93

Recommendation Table 6 — Recommendations for pre-operative assessment of frailty and functional capacity

Recommendations	Class[a]	Level[b]
In patients aged ≥70 years and scheduled to undergo intermediate- or high-risk NCS, frailty screening should be considered using a validated screening tool.[84–87,90,91]	IIa	B
Adjusting risk assessments according to self-reported ability to climb two flights of stairs should be considered in patients referred for intermediate- or high-risk NCS.[94]	IIa	B

NCS, non-cardiac surgery.
[a]Class of recommendation.
[b]Level of evidence.

ESC European Society of Cardiology
European Heart Journal (2022) 43, 3826–3924
https://doi.org/10.1093/eurheartj/ehac270
ESC GUIDELINES

2022 ESC Guidelines on cardiovascular assessment and management of patients undergoing non-cardiac surgery

Developed by the task force for cardiovascular assessment and management of patients undergoing non-cardiac surgery of the European Society of Cardiology (ESC)

Endorsed by the European Society of Anaesthesiology and Intensive Care (ESAIC)

"The peri-operative evaluation of elderly patients who require elective major non-cardiac surgery should include frailty screening, which has proven to be an excellent predictor of unfavourable health outcomes in the older surgical population"

An example of frailty: hip fractures in the elderly

"It is important to identify factors we can modify perioperatively to potentially decrease these risks"

Fields AC «Short-term complications in hip fracture surgery using spinal versus general anaesthesia», Injury, 2015

Timing of surgery

- **Perform surgery on the day of, or the day after, admission**
- **Identify and treat correctable comorbidities immediately so that surgery is not delayed by:**
  - **anaemia**
  - **volume depletion**
  - **anticoagulation**
  - **electrolyte imbalance**
  - **uncontrolled diabetes**
  - **uncontrolled heart failure**
  - **correctable cardiac arrhythmia or ischaemia**
  - **acute chest infection**
  - **exacerbation of chronic chest conditions**

NICE National Institute for Health and Care Excellence

National Institute for Health and Excellence
"Hip fracture: management", 2017

Analgesia

ASSESS THE PATIENT'S PAIN

- Ensure analgesia is sufficient to allow movements necessary for investigations and for nursing care and rehabilitation
- Offer paracetamol every 6 hours preoperatively unless contraindicated
- Offer additional opioids if paracetamol alone does not provide sufficient preoperative pain relief
- Consider adding nerve blocks if paracetamol and opioids do not provide sufficient preoperative pain relief, or to limit opioid dosage
- Non-steroidal anti-inflammatory drugs (NSAIDs) are not recommended

NICE National Institute for Health and Care Excellence

National Institute for Health and Excellence "Hip fracture: management", 2017

«Il dolore è uno dei sintomi più significativi del paziente con frattura di femore. Sebbene l'intervento chirurgico precoce rappresenti la migliore strategia terapeutica, è essenziale garantire un adeguato controllo del dolore dall'arrivo in PS, durante il periodo iniziale di valutazione in cui si decide il trattamento e per tutto il percorso assistenziale del paziente. Un controllo insufficiente del dolore in fase preoperatoria non solo genera sofferenza ma è associato ad aumento del rischio di delirium, mentre nel postoperatorio può ritardare la mobilizzazione e aumentare il rischio di complicanze connesse all'allettamento prolungato, con relativo aumento dei tempi di ospedalizzazione.

Il trattamento del dolore nella frattura di femore deve essere preventivo e iniziare molto precocemente, prima di effettuare manovre che richiedano la mobilizzazione del paziente.

- ***Paracetamolo, somministrato a intervalli regolari***
- ***Blocchi antalgici ecoguidati***
  - ***Blocco della fascia iliaca***
  - ***Blocco del nervo femorale***
  - ***PENG block»***

Protocollo aziendale: «Il trattamento precoce del dolore nella frattura di femore»
Fabrizio Fattorini, Sandra G. Benvenuti, Andrea Calò
Azienda Ospedaliero-Universitaria Policlinico Umberto1
DAI Emergenza e Accettazione, Anestesia ed Aree Critiche

ANESTHETIC APPROACH

GENERAL ANESTHESIA

LOCOREGIONAL ANESTHESIA

GENERAL ANESTHESIA

- **Anesthesia in general is a safe procedure. General anesthesia (GA) is effective, easy to apply and offers optimal surgical conditions, in particular during long lasting procedures**
- **Nevertheless, post-operative cognitive dysfunction (POCD) and post-operative delirium are frequently associated with GA as well as cardio-pulmonary adverse effects, especially in the elderly and in fragile patients**

E. Board.
"The first use of ether as an anaesthetic in dental surgery by W.T.G. Morton in 1846"

Xuezhao C et al. Perioperative Care of Elderly Surgical Outpatients. Drugs & aging, 2017

Age-related physiologic changes and clinical implications for GA

	Physiologic alterations	Clinical implications
Cardiovascular	Decreased sympathetic response	Labile blood pressure
	Reduced vascular elasticity	Susceptibility to hypotension
	Decrease in preload	Susceptibility to volume overload
	Baroreceptor response impaired	Exaggerated decline in cardiac function with inadequate cardiac filling
	Cardiac diastolic dysfunction	Profound cardiovascular-depressing effects of anesthetics
	Cardiac interstitial fibrosis	
Pulmonary	Increased pulmonary arterial pressures	Increased A—a gradient
	Decreased response to hypoxia and hypercarbia	Higher risk of hypercarbia, atelectasis and hypoxemia
		Susceptibility to residual anesthetic effects
	Decreased elasticity in lung parenchyma and chest wall	Increased work of breathing
		Increased dead space ventilation
	Increased closing capacity of the smaller airways	Impaired pharyngeal function: reduced cough reflexes, increased risk of aspiration
	Decreased cough reflex and esophageal motility	Increased ventilation/perfusion (V/Q) mismatch, reduction in baseline PaO_2
	Weakening of respiratory muscles (loss of muscle mass)	
Nervous system	Reduction in brain mass, number of neurons, neurotransmitters and receptors	Increased risk of postoperative delirium and cognitive dysfunction
	Reduced number of pain-transmitting peripheral nerve fibers	Decreased autonomic responsiveness (diminished central response to hypercapnia/hypoxemia, autoregulation, decreased parasympathetic function)
		Slower and decreased pain perception and ability to report pain
		Higher sensitivity to most anesthetics
Endocrine system	Impaired glucose tolerance	Increased intraoperative hyperglycemia
Hepatic/renal system	Altered drug metabolism	Decreased drug clearance
	Decreased hepatic blood flow	Diminished albumin levels result in increased free-fraction concentration of highly protein-bound drug
	Decreased renal mass	Susceptible to acute kidney injury
	Reduction in hepatocyte mass and function, modified architecture	Use medications with renal toxicity risk cautiously (e.g., NSAIDs)
Thermoregulation	Decreased muscle mass	Increased risk of hypothermia
	Decreased vascular reactivity	

Xuezhao C et al. Perioperative Care of Elderly Surgical Outpatients. Drugs & aging, 2017

Recommended anesthetic drug dosage adjustments for elderly ambulatory surgery patients

	Usual quoted doses	Suggested adjustments
Intravenous agents		
Propofol	Bolus 1.5–2.5 mg/kg	20% reduction in bolus dose
	Infusion 4–12 mg/kg/h	30% reduction in infusion
Etomidate	0.3–0.4 mg/kg	0.2 mg/kg
Midazolam	0.2–0.3 mg/kg	0.05–0.15 mg/kg (premedication)
		20% reduction (aged >55 y)
		75% reduction (aged >90 y)
Inhalational agents		
Isoflurane	1.2%	Minimum alveolar concentration is reduced by 6% per decade of increasing age
Sevoflurane	1.8%	
Desflurane	6.6%	
Opioids		
Fentanyl	1–2 μg/kg for short-term analgesia	50% reduction in dose
Morphine	0.1–0.2 mg/kg	50% reduction in dose
Remifentanil	Bolus 0.5–1 μg/kg	50% reduction in bolus dose
	Infusion 0.2–0.5 μg/min	33% reduction in infusion

Xuezhao C et al. Perioperative Care of Elderly Surgical Outpatients. Drugs & aging, 2017

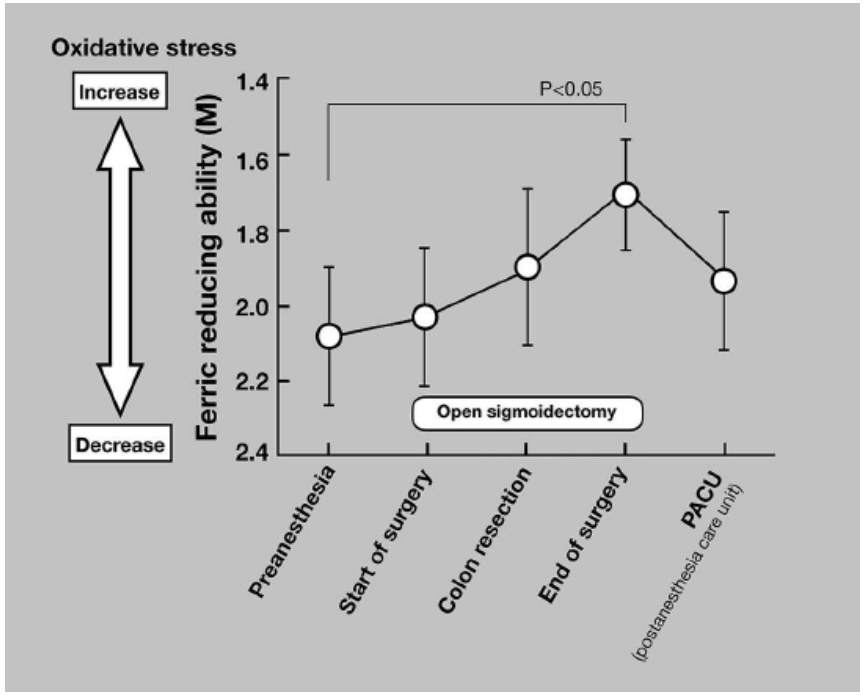
Oxidative stress associated with surgery and inhalation of anesthetics

“These findings strongly suggest negative effects of inhalation general anesthetics including an increase in oxidative stress in surgical patients. Oxidative stress may also be a key factor to determine patient surgical stress”

Regional Anesthesia: Advantages of Combined Use with General Anesthesia and Useful Tips for Improving Nerve Block Technique with Ultrasound Technology

Masahiko Tsuchiya

Current Topics in Anesthesiology



What are the benefits of locoregional anesthesia?

American Society of Regional Anesthesia and Pain Medicine

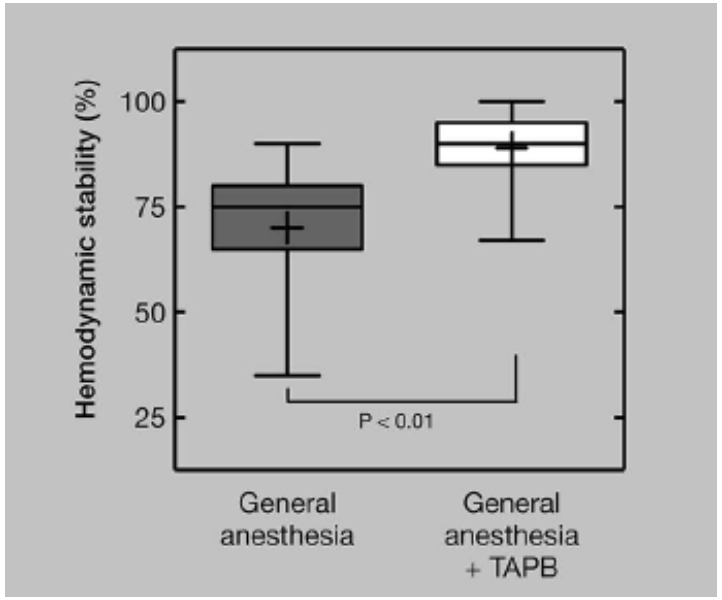
- Regional anaesthesia (RA) reduces acute pain, chronic pain after some surgical procedures, postoperative nausea and vomiting and pulmonary complications
- Earlier recovery of bowel function
- Less need for systemic opioids (narcotics)
- Easier breathing resulting from better pain control
- Easier participation in physical therapy
- Some studies have shown RA to be associated with a reduction in cancer recurrence, blood transfusion requirements, surgical site infections, ICU admission, and mortality; however, these associations must be treated cautiously
- NO post-operative cognitive dysfunction (POCD) and post-operative delirium

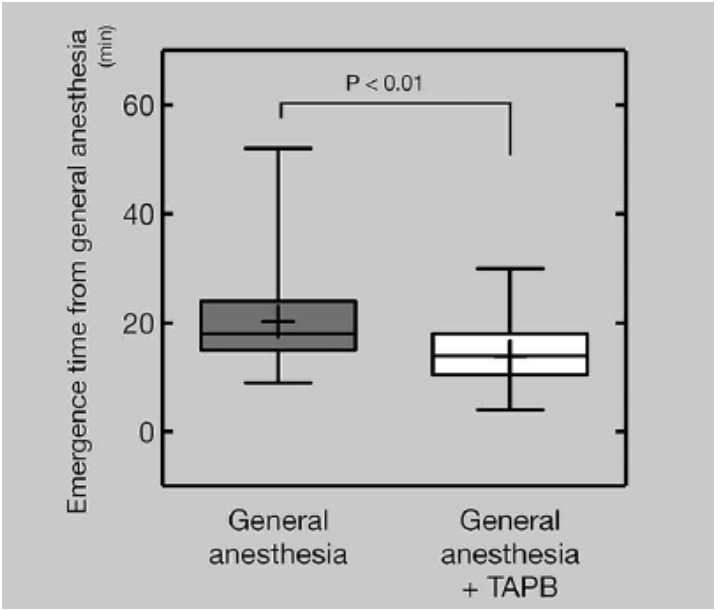
M. Hutton1 et AL. Regional anaesthesia and outcomes
British Journal of Anaesthesia, 2018

Better intraoperative hemodynamic control by regional anesthesia

Regional anesthesia combined with general anesthesia provides not only better postoperative analgesia, but may also result in better intraoperative hemodynamic control than general anesthesia alone [22]. We demonstrated this advantage of regional anesthesia in an investigation of high-risk patients with severe cardiovascular disease classified as American Society of Anesthesiologists (ASA) physical status 3.

It is important for anesthesiologists to offer effective anesthesia management for high-risk patients with severe cardiovascular disease [23], as they frequently require special treatment with a variety of expensive drugs and increased medical staffing. This combined regional and general anesthesia technique is si mple and easy to perform, and its advantages include relief of the burden to the anesthesiologist and reduced medical costs for such high-risk cases, as well as improved patient safety.





Tsuchiya M et al. «Transversus abdominis plane block in combination with general anesthesia provides better intra-operative hemodynamic control and quicker recovery than general anesthesia alone in high-risk abdominal surgery patients». Minerva Anestesiol 2012

Which anesthesia?

- **Offer patients a choice of spinal or general anaesthesia after discussing the risks and benefits**
- **Consider intraoperative nerve blocks for all patients undergoing surgery**

NICE
National Institute for Health and Care Excellence

NICE - National Institute for Health and Excellence
"Hip fracture: management", 2017

Hip fracture: Is spinal anesthesia no longer the golden standard?

This article was published on October 9, 2021, at NEJM.org.

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Spinal Anesthesia or General Anesthesia for Hip Surgery in Older Adults

M.D. Neuman, R. Feng, J.L. Carson, L.J. Gaskins, D. Dillane, D.I. Sessler, F. Sieber, J. Magaziner, E.R. Marcantonio, S. Mehta, D. Menio, S. Ayad, T. Stone, S. Papp, E.S. Schwenk, N. Elkassabany, M. Marshall, J.D. Jaffe, C. Luke, B. Sharma, S. Azim, R.A. Hymes, K.-J. Chin, R. Sheppard, B. Perlman, J. Sappenfield, E. Hauck, M.A. Hoeft, M. Giska, Y. Rangarath, T. Tedore, S. Choi, J. Li, M.K. Kwofie, A. Nader, R.D. Sanders, B.F.S. Allen, K. Vlassakov, S. Kates, L.A. Fleisher, J. Dattilo, A. Tierney, A.J. Stephens-Shields, and S.S. Ellenberg, for the REGAIN Investigators*

CONCLUSIONS

Spinal anesthesia for hip-fracture surgery in older adults was not superior to general anesthesia with respect to survival and recovery of ambulation at 60 days. The incidence of postoperative delirium was similar with the two types of anesthesia. (Funded by the Patient-Centered Outcomes Research Institute; REGAIN ClinicalTrials.gov number, NCT02507505.)

«This study concludes that there was no difference in outcome between spinal and general patients with a hip fracture. However, the study was powered based on the composite outcome (death at 60 days), assuming that the outcome would be 34%. Since death at 60 days in the study was only 18%, it is clear that the population in this study was much healthier than that typically encountered in typical clinical practice. Moreover, 15% of patients randomized for spinal had to cross to general anesthesia due to the inability or failure of spinal anesthesia. These data indicate that the practitioners who performed spinal anesthesia in this study were experts in general, and not in regional, anesthesia»

NYSORA

Annals of Internal Medicine ORIGINAL RESEARCH

Pain, Analgesic Use, and Patient Satisfaction With Spinal Versus General Anesthesia for Hip Fracture Surgery

A Randomized Clinical Trial

Mark D. Neuman, MD, MSc; Rui Feng, PhD; Susan S. Ellenberg, PhD; Frederick Sieber, MD; Daniel I. Sessler, MD; Jay Magaziner, PhD, MSHyg; Nabil Elkassabany, MD; Eric S. Schwenk, MD; Derek Dillane, MD; Edward R. Marcantonio, MD, MSc; Diane Menio, MS; Sabry Ayad, MD; Manal Hassan, MD; Trevor Stone, MD; Steven Papp, MD; Derek Donegan, MD; Mitchell Marshall, MD; J. Douglas Jaffe, DO; Charles Luke, MD; Balram Sharma, MD; Syed Azim, MD; Robert Hymes, MD; Ki-Jinn Chin, MD; Richard Sheppard, MD; Barry Perlman, PhD, MD; Joshua Sappenfield, MD; Ellen Hauck, DO, PhD; Mark A. Hoeft, MD; Ann Tierney, MS; Lakisha J. Gaskins, MHS; Annamarie D. Horan, MPA, PhD; Trina Brown; James Dattilo, BS; and Jeffrey L. Carson, MD; on behalf of the REGAIN (Regional versus General Anesthesia for Promoting Independence after Hip Fracture) Investigators*

Conclusion

Severe pain is common after hip fracture. Spinal anesthesia was associated with more pain in the first 24 hours after surgery and more prescription analgesic use at 60 days compared with general anesthesia.

«In this study, general anesthesia was performed according to the protocol, whereas spinal anesthesia was conducted without any protocol. As an example, we do not know what premedication was used for positioning the patients for the spinal anesthesia, the level of neuraxial block achieved, or what doses were administered. Also, there remains the possibility that patients were just put to sleep in order to perform the spinal anesthesia. Likewise, intraoperative sedation was mandates for patients receiving spinal anesthesia, which may have contributed to biased information concerning the incidence of delirium postoperatively»

NYSORA

"There is a lack of consensus in the literature as to whether anesthetic modality influences perioperative complications in hip fracture surgery.
Methods *We used the ACS NSQIP to identify patients aged 50 and older (n. 40.527) who received either spinal or general anesthesia for hip fracture surgery from 2016 to 2019. The primary outcome of interest was the combined incidence of stroke, myocardial infarction (MI) or death within 30 days. Secondary outcomes included 30-day mortality, hospital length of stay and operative time.*
Results *General anesthesia was associated with a higher incidence of combined 30-day stroke, MI or death compared with spinal anesthesia…higher frequency of 30-day mortality and longer operative time. Spinal anesthesia had a longer average hospital length of stay (6.29 vs 5.73 days; p=0.001)"*


Original research

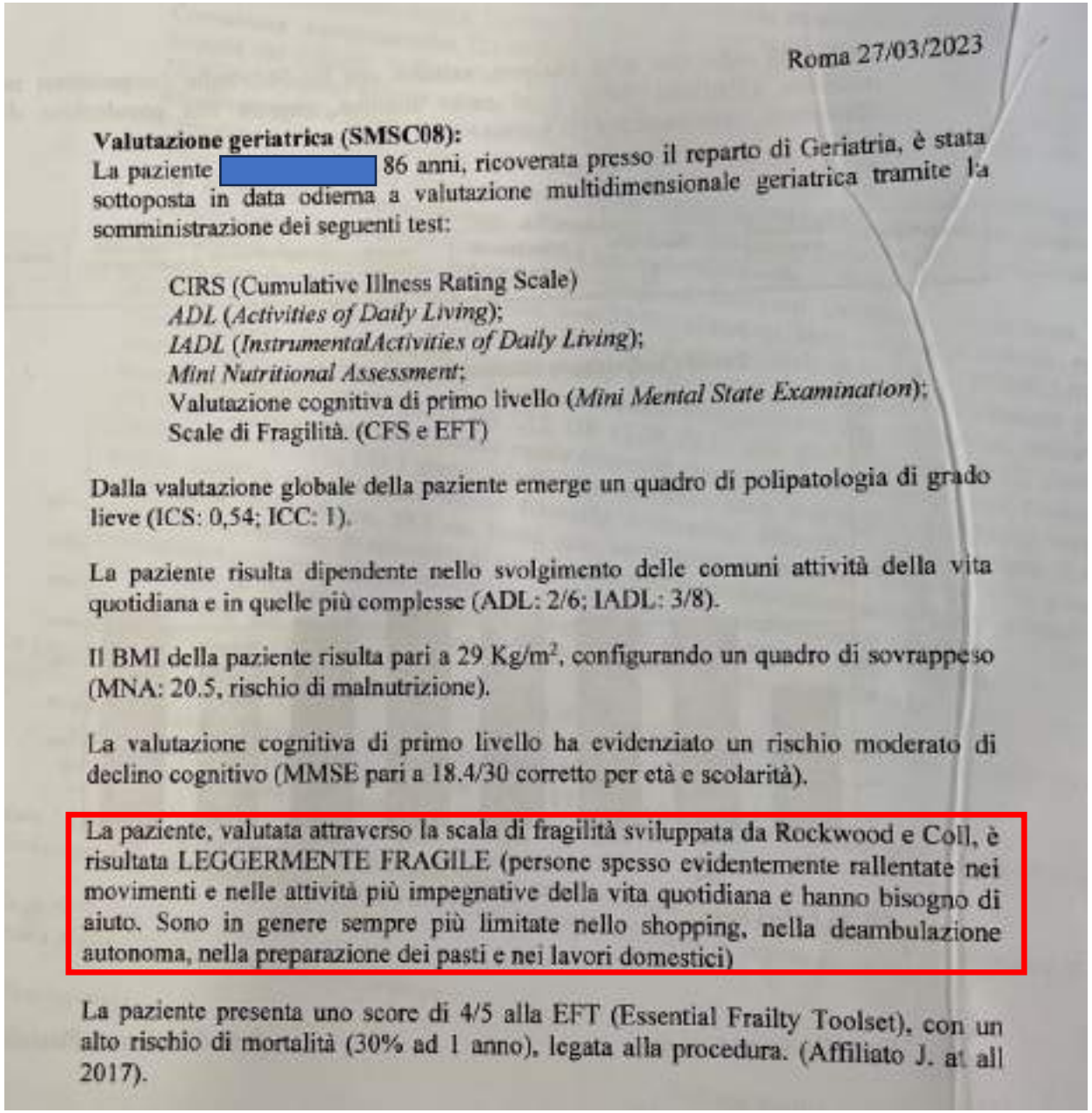
Improved outcomes for spinal versus general anesthesia for hip fracture surgery: a retrospective cohort study of the National Surgical Quality Improvement Program

Eliana R Weinstein, Richard B Boyer, Robert S White, Roniel Y Weinberg, Jacob M Lurie, Nicolas Salvatierra, Tiffany R Tedore

Reg Anesth Pain Med 2023

CLINICAL CASE

- 86 year old woman, obese, femur fracture, scheduled osteosynthesis surgery with intramedullary nail
- Patient suffering from severe aortic stenosis with cardiac surgery indication, dementia
- Diagnosis of frailty (Rockwood test)
- Drug therapy: beta blockers, diuretics, edoxaban (suspended 5 days before) and replaced with enoxaparin, calcium antagonists



Roma 27/03/2023

Valutazione geriatrica (SMSC08):
La paziente [redacted] 86 anni, ricoverata presso il reparto di Geriatria, è stata sottoposta in data odierna a valutazione multidimensionale geriatrica tramite la somministrazione dei seguenti test:

CIRS (Cumulative Illness Rating Scale)
ADL (*Activities of Daily Living*);
IADL (*InstrumentalActivities of Daily Living*);
Mini Nutritional Assessment;
Valutazione cognitiva di primo livello (*Mini Mental State Examination*);
Scale di Fragilità. (CFS e EFT)

Dalla valutazione globale della paziente emerge un quadro di polipatologia di grado lieve (ICS: 0,54; ICC: 1).

La paziente risulta dipendente nello svolgimento delle comuni attività della vita quotidiana e in quelle più complesse (ADL: 2/6; IADL: 3/8).

Il BMI della paziente risulta pari a 29 Kg/m^2, configurando un quadro di sovrappeso (MNA: 20.5, rischio di malnutrizione).

La valutazione cognitiva di primo livello ha evidenziato un rischio moderato di declino cognitivo (MMSE pari a 18.4/30 corretto per età e scolarità).

La paziente, valutata attraverso la scala di fragilità sviluppata da Rockwood e Coll, è risultata LEGGERMENTE FRAGILE (persone spesso evidentemente rallentate nei movimenti e nelle attività più impegnative della vita quotidiana e hanno bisogno di aiuto. Sono in genere sempre più limitate nello shopping, nella deambulazione autonoma, nella preparazione dei pasti e nei lavori domestici)

La paziente presenta uno score di 4/5 alla EFT (Essential Frailty Toolset), con un alto rischio di mortalità (30% ad 1 anno), legata alla procedura. (Affiliato J. at all 2017).

- **Premedication with droperidol 2.5 mg + fentanyl 50 mcg**
- **PENG block (ropivacaine 0.5% 20 ml)**
- **Pre-filling with lactated ringer 500 ml**
- **The patient is positioned on the side contralateral to the fracture and the spinal catheter is positioned at L3L4: bupivacaine 0.5% 4 mg is administered and, once the level of anesthesia has been ascertained, the patient is transferred to the operating room**

- **Bolus of 2.5 mg 20 minutes after the start of the procedure**
- **Duration of the surgical procedure 55 min**
- **Hemodynamic stability, not administered vasoconstrictors**
- **The patient was sent to the ward in fair general condition and without pain**

TAKE HOME MESSAGE

- The frail patients remain a medical challenge for the anesthesiologist, mainly because of the frequent and numerous adverse events
- Efforts must be concentrated on identifying the frail patient in order to correct any comorbidities
- LRA has a significant role in pain control in the perioperative period
- Compared with GA, SA is associated with fewer complications
- Combined use of general with regional anesthesia is advantageous to decrease oxidative stress and also provides better intraoperative hemodynamics than general anesthesia alone


non sono un medico ma
secondo me, non va mica
bene quella roba lì