Perioperative cognitive disorders

Philip Braude

ST7 Geriatrics & Perioperative Medicine Guy's and St Thomas' Hospital @DrPhilipBraude

British Society of Orthopaedic Anaesthetists 2016

With thanks to...



Jugdeep Dhesi – POPS lead Judith Partridge – POPS consultant Dan Taylor – consultant anaesthetist

Learning Outcomes

Cognitive disorders in perioperative period are common

Define: - postoperative delirium (POD)- postoperative cognitive dysfunction (POCD)

Causative factors of POD are multifactorial

Treatment of POD is multifactorial and coordinated

Strategies to address POD in clinical practice



BMJ 2011;343:d4331 doi: 10.1136/bmj.d4331

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CLINICAL REVIEW

Anticipating and managing postoperative delirium and cognitive decline in adults

Robert D Sanders *Medical Research Council clinical training fellow*¹², Pratik P Pandharipande *associate professor*³⁴, Andrew J Davidson *associate professor*⁵⁶, Daqing Ma *senior lecturer*¹, Mervyn Maze *professor*⁷

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The real challenge

Domain	Referral		
Joyce : 86 year old – total hip replacement			
Hypertension	BP 150/85		
Renal failure	eGFR 28		
Walking	Walks with two sticks		

The real challenge

Domain	Assessment		
Joyce : 86 year old – total hip replacement			
Cognition	Progressively worse Agitated last admission – Long LOS		
Alcohol	Drinks half bottle wine a day		
Medications	Constant knee pain Now on sleeping pills		
Renal failure	eGFR 28 - hypertension		
Constipation	Analgesia related		

Joyce is at risk of delirium

Definition

Dementia vs Delirium

Dementia Delirium

Chronic

Acute

Progressive

Fluctuating

Irreversible

Reversible-ish

Definitions

Term	Definition	Timing
Delirium	1. Acute change & fluctuates	Incident <24hr
	2. Inattention	Prevalent >24hr
	3a. Disorganised thinking	Hours to weeks
	3b. Altered GCS - not coma	
POD	After surgery Hyperactive, hypoactive	Hours to weeks
Emergent delirium	From anaesthetic	30 minutes
POCD/LTCI	After surgery Neurobehavioural change	Hours – years?

Diagnostics - CAM

Feature 1: Acute change or fluctuating course of mental status



\frown					(lab
		Patient name:			
4 A I)		Date of birth:			
		Patient number:			
Assessment test for delirium &		Date:	Time:		
cognitive impairment		Tester:			
				CIRCLE	_
[1] ALERTNESS This includes patients who may be markedly during assessment) or agitated/hyperactive. speech or gentle touch on shoulder. Ask the	drowsy (eg. a Observe the p patient to stat	lifficult to rouse and patient. If asleep, at te their name and a	l/or obviously sleepy tempt to wake with ddress to assist rating.		
	Normal	(fully alert, but not	agitated, throughout assessment)	0	
	Mild sle	epiness for <10 se	conds after waking, then normal	0	
	Clearly	abnormal		4	
[2] AMT4 Age, date of birth, place (name of the hospita	al or building),	current year.			
	No mist	takes		0	
	1 mista	ke		1	
	2 or mo	ore mistakes/untest	able	2	
[3] ATTENTION Ask the patient: "Please tell me the months of To assist initial understanding one prompt of	of the year in b "what is the n	oackwards order, st nonth before Decer	arting at December." nber?" is permitted.		
Months of the year backwards	Achieve	es 7 months or mor	e correctly	0	
	Starts b	out scores <7 montl	ns / refuses to start	1	
	Untesta	able (cannot start be	ecause unwell, drowsy, inattentive)	2	
[4] ACUTE CHANGE OR FLUCTU Evidence of significant change or fluctuation (eg. paranoia, hallucinations) arising over the	ATING CO in: alertness, a last 2 weeks	URSE cognition, other me and still evident in	ental function last 24hrs		
		No		0	
		Yes		4	
4 or above: possible delirium +/- cognitive in	npairment				 7
0: delirium or severe cognitive impairment ur delirium still possible if [4] information incom	nlikely (but plete)		4AT SCORE]

Diagnostics - tools

- POD

 -clinical history
 -examination
 -ward CAM, CAM-ICU, 4AT
 -research DRS-98
- POCD
 - -neurocognitive battery of tests

Definitions overlap



Perioperative delirium and its relationship to dementia. Silverstein. 2013. Progress in Neuro-Psychopharmology and Biological Psychology





Delirium in Clinical Practice

Incidence rises with age...but can happen to all



Postoperative Delirium in the Elderly. Annals of Surgery. 2009. Robinson

People living longer...

Estimated and projected age structure of the United Kingdom population, mid-2010 and mid-2035



...with health-related problems...



...multimorbidity...



Barnett, Lancet 2012

...especially degenerative & neoplastic disease...



National Cancer Intelligence Network, UK. 2010

....that require surgery



Figure 3 Rate of elective and emergency hip replacement procedures, by age

Access All Ages – RCS 2012

How common is POD?

Differs across procedures

- 50% hip fracture
- 36% vascular surgery
- 4% cataract surgery

Compared with consented complications

- 0.1% fatal PE in 3m after hip fracture
- elective THR/TKR wound infection

Marcantonio 2000 & 2002, Milstein 2002, Gustafson 1988, Geerts 2004, Nicolaides 2001, Gillespie 2000, Schneider 2002, Gaine 2000, Douketis 2002, Inouye 1994

Delirium is Dangerous

- Morbidity
 - Pressure ulcers, falls, functional decline
 - Care homes
 - Psychological distress
- Financial costs
 - Length of stay (increased by x4)
 - Cost of morbidity

Marcantonio 2000, Robinson 2009 , McCusker 2002 Rockwood 1999, Inouye 1993, Inouye 1998, Breibart 2002, Berggren 1987, Partridge 2012

Delirium is Dangerous



Figure 1. Unadjusted Kaplan-Meier survival curves of the 12-month mortality rate by study group.

Delirium Predicts 12-Month Mortality. Arch Intern Med.McCusker 2002

Delirium is Dangerous



Mortality rates in patients with STEMI vs. NSTEMI: European Heart Journal 23 November 2004

Prevention

Delirium causes



Sanders BMJ 2011

Delirium causes

Predisposing factors Age Neuronal loss Neurotransmitter loss Cognitive impairment Depression Comorbiditiy (renal) Apolipoproteins



Sanders BMJ 2011

Delirium causes

Predisposing factors Age Neuronal loss Neurotransmitter loss Cognitive impairment Depression Comorbiditiy (renal) Apolipoproteins



Precipitating factors Neuroinflammation Metabolic Constipation Sepsis Medication Pain Sleep

Sanders BMJ 2011

First focus on risk factors... Esther Geri Psych 2014

Preoperative risk factors for postoperative delirium following hip fracture repair: a systematic review

Esther S. Oh^{1,2,3,6}, Meng Li⁷, Tolulope M. Fafowora¹, Sharon K. Inouye^{8,9}, Cathy H. Chen¹⁰, Lori M. Rosman⁵, Constantine G. Lyketsos², Frederick E. Sieber⁴ and Milo A. Puhan^{6,11}

Cognitive impairment *Multimorbidity Polypharmacy Functional impairment Age*

...to try and modify risk Inouye NEJM 1999

A MULTICOMPONENT INTERVENTION TO PREVENT DELIRIUM IN HOSPITALIZED OLDER PATIENTS

SHARON K. INOUYE, M.D., M.P.H., SIDNEY T. BOGARDUS, JR., M.D., PETER A. CHARPENTIER, M.P.H., LINDA LEO-SUMMERS, M.P.H., DENISE ACAMPORA, M.P.H., THEODORE R. HOLFORD, PH.D., AND LEO M. COONEY, JR., M.D.

TARGETED RISK FACTOR AND ELIGIBLE PATIENTS	STANDARDIZED INTERVENTION PROTOCOLS	TARGETED OUTCOME FOR REASSESSMENT
Cognitive impairment* All patients, protocol once daily; patients with base-line MMSE score of <20 or orientation score of <8, protocol three times daily	Orientation protocol: board with names of care-team members and day's schedule; communication to reorient to surroundings Therapeutic-activities protocol: cognitively stimulating activities three times daily (e.g., discussion of current events, structured reminiscence, or word games)	Change in orientation score
Sleep deprivation All patients; need for protocol assessed once daily	Nonpharmacologic sleep protocol: at bedtime, warm drink (milk or herbal tea), relaxation tapes or music, and back massage Sleep-enhancement protocol: unit-wide noise-reduction strategies (e.g., silent pill crushers, vibrating beepers, and quiet hallways) and schedule adjustments to allow sleep (e.g., rescheduling of medications and procedures)	Change in rate of use of sedative drug for sleep†
Immobility All patients; ambulation whenever possible, and range-of-motion exercises when patients chronically non-ambulatory, bed or wheel- chair bound, immobilized (e.g., because of an extremity fracture or deep venous thrombosis), or when prescribed bed rest	Early-mobilization protocol: ambulation or active range-of-motion exercises three times daily; minimal use of immobilizing equip- ment (e.g., bladder catheters or physical restraints)	Change in Activities of Daily Living score
Visual impairment Patients with <20/70 visual acuity on binocular near-vision testing	Vision protocol: visual aids (e.g., glasses or magnifying lenses) and adaptive equipment (e.g., large illuminated telephone key- pads, large-print books, and fluorescent tape on call bell), with daily reinforcement of their use	Early correction of vision, ≤48 hr after admission

...to try and modify risk *Inouye NEJM* 1999



...to try and modify risk *Inouye NEJM* 1999



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Similar effect in surgical patients

Reducing Delirium After Hip Fracture: A Randomized Trial

Edward R. Marcantonio, MD, SM, *⁺⁺ Jonathan M. Flacker, MD,⁺⁺ R. John Wright, MD,[§] and Neil M. Resnick, MD *^{++¶}

- RCT
- Proactive geriatrician vs usual care
- n = 126 > 65yo
- Recommendations similar to HELP
 - Average of 10 recommendations

Similar effect in surgical patients

Reducing Delirium After Hip Fracture: A Randomized Trial

Edward R. Marcantonio, MD, SM, *^{†‡} Jonathan M. Flacker, MD,^{†‡} R. John Wright, MD,[§] and Neil M. Resnick, MD *^{†‡¶}

77% adherence by orthopods

Delirium 50% vs 32%

NNT = 6

Marcantonio JAGS 2001
What about using the whole MDT? Deschodt JAGS 2012

Preventing Delirium in Older Adults with Recent Hip Fracture Through Multidisciplinary Geriatric Consultation

Mieke Deschodt, RN, MSN, *[†] Tom Braes, RN, MSN, *[‡] Johan Flamaing, MD, PhD,[†] Elke Detroyer, RN, MSN, * Paul Broos, MD, PhD,[§] Patrick Haentjens, MD, PhD,[¶] Steven Boonen, MD, PhD,[†]** and Koen Milisen, RN, PhD*[†]

Preop CGA report from

Geriatrician, nurse, OT, physio, social worker

What about using the whole MDT? Deschodt JAGS 2012

Preventing Delirium in Older Adults with Recent Hip Fracture Through Multidisciplinary Geriatric Consultation

Miel Deti

PbD

Delirium 53.2 % vs 37.2%

Duration and severity same

MD,

So make multicomponent routine care *Milisen JAGS 2001*

A Nurse-Led Interdisciplinary Intervention Program for Delirium in Elderly Hip-Fracture Patients

Koen Milisen, RN, PhD,* Marquis D. Foreman, RN, PhD, FAAN,[†] Ivo L. Abraham, RN, PhD, FAAN,[‡] Sabina De Geest, RN, PhD, NFESC,[§] Jan Godderis, MD, PhD,[¶] Erik Vandermeulen, MD, PhD,[¶] Benjamin Fischler, MD, PhD,[#] Herman H. Delooz, MD, PhD, FCCM,^{**} Bart Spiessens, Msc,^{††} and Paul L. O. Broos, MD, PhD[#]

Protocolised intervention

- Education, cognitive screening
- Delirium team: nurse \rightarrow CNS/pyschogeriatrician
- Pain protocol: IV tramadol

n = 120: 60 before & 60 after

So make multicomponent routine care *Milisen JAGS 2001*

A Nurse-Led Interdisciplinary Intervention Program for Delirium in Elderly Hip-Fracture Patients



Reducing delirium in elderly patients with hip fracture: a multi-factorial intervention study

- Protocolised intervention
 - Prehospital to postoperative
 - Recruited in A&E
- n = 273 before and after

The multi-factorial program for patients in the intervention group (n = 131) undergoing surgery for hip fracture, starting pre-hospitally.

1. Supplemental oxygen 3–4 l/min: in the ambulance and continually (including transfers between wards/departments) until day 2 postoperatively, the patient is mobilized, or the patient's oxygen saturation is \geq 95% without oxygen in order to increase oxygen delivery into the tissues^{6,13,40}

2. Intravenous (i.v.) fluid supplementation and extra nutrition: fructose/glucose 1.0 l in the ambulance or immediately after admittance to the A&E for improvement of fluid balance and tissue perfusion. Additional i.v. supplementation in case of increased fasting. Extra oral multi-nutrient drinks daily post-operatively for improvement of nutritional balance^{30,41–43}

3. Increased monitoring of vital physiological parameters: especially oxygen saturation (a pulse-oximeter should be kept adherent to every patient) starting at the place of injury until post-operatively, day 5. Systolic blood pressure should be maintained \geq 90–100 mmHg. Red blood cell transfusion should be considered if hemoglobin < 100 g/l. Body temperature should be kept normal; avoid hypo-/ hyperthermia^{13,30,31,44}

4. Adequate pain relief: immediately after admittance at the A&E with a combination of opioids i.v. and paracetamol. Pain should be measured several times on a daily basis \geq day 5 as pain: yes/no, and as intensity of pain: 1–10. Patient should be kept continually pain-relieved^{27,28}

5. Avoid delay in transfer logistics: nurse assessment (RN) of patient immediately (\leq 5 min) after admittance to the A&E. Assessment by the orthopedic surgeon (\leq 30 min) before referral to the X-ray department. After X-ray directly to the orthopedic ward without a second visit to the A&E (routine before the intervention) with the purpose of decreasing the waiting time and an overload of staff-patient interactions^{13,33,34}

6. Screen for delirium through daily testing with the OBS scale: one researcher is always available day and night. All staff is educated and instructed to pay increased attention to symptoms of delirium^{6,22}

7. Avoid polypharmacia: sedatives/hypnotics and drugs with anticholinergic properties should be administered with restriction^{6,29}

8. Perioperative/Anesthetic period: for pre-medication paracetamol is recommended as a first choice. Propofol and/or alfentanil i.v. is recommended at arrival at the operating department before transfer to the operation table. Spinal anesthesia with bupivacain is recommended as a first choice. I.v. saline-acetate 0.51 should be administered before application. Systolic blood pressure should be maintained at >2/3 of baseline or >90 mmHg. Red blood cell transfusion should be administered if there is a tendency toward increased blood loss (>0.31) or hemoglobin <100 g/l. For sedation, propofol is recommended. Give adequate post-operative analgesia with paracetamol as a first choice or in combination with an opioid^{13,28,31,32,45}

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6. Screen for delirium throug and instructed to pay increa	Avoid polypharmacy	ht. All staff is educated
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Issues with researching multicomponent intervention...

- The 'black box' of intervention...
- Problems with randomising
- Longer term follow up
- Translating research into practice

NICE Delirium Guidance 2014

- 1.3.3 The tailored multicomponent intervention package should be delivered by a multidisciplinary team trained and competent in delirium prevention.
- 1.3.3.1 Address cognitive impairment and/or disorientation by:
 - providing appropriate lighting and clear signage; a clock (consider providing a 24-hour clock in critical care) and a calendar should also be easily visible to the person at risk
 - talking to the person to reorientate them by explaining where they are, who they are, and what your role is
 - introducing cognitively stimulating activities (for example, reminiscence)
 - facilitating regular visits from family and friends.
- 1.3.3.2 Address dehydration and/or constipation by:

Possible areas intraoperatively

1. Haemodynamic interventions

2. Modified anaesthetic techniques

3. Pharmacological interventions

Intraoperative hypotension is bad

- Intraoperative hypotension MAP <50mmHg
- Intraop BP variance
 - Impaired autoregulation
 - Age related changes e.g. arterial stiffness
 - Multimorbidity e.g. DM, HTN
 - Polypharmacy e.g. anti-hypertensives

Impact of intraoperative hypotension and blood pressure fluctuations on early postoperative delirium after non-cardiac surgery. Hirsch. BJA 2015

Regional vs General no difference



The Impact of General and Regional Anesthesia on the Incidence of Post-Operative Cognitive Dysfunction and Post-Operative Delirium: A Systematic Review with Meta-Analysis. Mason. Jounral of Alzheimer's Disease 2010

BIS monitoring - part of the answer?

	BIS guided (n=575)	BIS blinded (n=580)
Anaesthetic		
Propofol (TIVA)	178 (31.0%)	149 (25.7%)
Volatile anaesthesia	397 (69.0%)	431 (74.3%)
Fentanyl	409 (71.1%)	391 (67.4%)
Remifentanil	166 (28.9%)	189 (32.6%)
Postoperative delirium (DSM-IV)	95 (16.7%; 95% CI: 13.87-19.96%)	124 (21.4%; 95% CI: 18.24-24.90%)
Duration of surgery (min)	164 (98)	175 (105)
POCD 7th postoperative day	70 (18.1%)	90 (23.9%)
POCD 90th postoperative day	21 (8.0%)	28 (10.3%)
Death	31 (5.4%; 95% CI: 3.82-7.55%)	31 (5.3%; 95% CI: 3.79-7.49%)
Postoperative LOS	15.7 (16.9)	15.9 (14.6)

Monitoring depth of anaesthesia in a randomized trial decreases the rate of postoperative delirium but not postoperative cognitive dysfunction. Radtke. BJA 2015



Are there simpler (and cheaper) treatments available?

- Haloperidol
- Olanzapine
- Melatonin
- Cholinesterase inhibitors
- Quetiapine
- Risperidone

Haloperidol *Kalisvaart JAGS 2005*

Haloperidol Prophylaxis for Elderly Hip-Surgery Patients at Risk for Delirium: A Randomized Placebo-Controlled Study

Kees J. Kalisvaart, MD,^{*} Jos F. M. de Jonghe, PhD,^{*} Marja J. Bogaards, PharmD,[†] Ralph Vreeswijk, RN, MSc,^{*} Toine C. G. Egberts, PhD,[‡] Bart J. Burger, MD, PhD,^{*} Piet Eikelenboom, MD, PhD,^{§¶} and Willem A. van Gool, MD, PhD^{$\|$}

- Prophylactic haloperidol 0.5mg TDS
 - 3 days preop & postop
 - If delirious \rightarrow regular haloperidol & lorazepam
 - Geriatric delivered multicomponent intervention
- n = 430 randomised
 - Visual/cognitive impaired, high BUN/APACHE II

Haloperidol *Kalisvaart JAGS 2005*

Haloperidol Prophylaxis for Elderly Hip-Surgery Patients at Risk for Delirium: A Randomized Placebo-Controlled Study

Kees J. Kalisvaart, MD,* Jos F. M. de Jonghe, PhD,* Marja J. Bogaards, PharmD,[†] Ralph Vreeswiik. RN. MSc.* Toine C. G. Egherts. PhD.[‡] Bart I. Burger. MD. PhD.*

Pi

Delirium 16.5% vs 15.1%

Duration of delirium 11.9 vs 5.4 days

Severity scores lower (DRS-Max)

• Visual/cognitive impaired, high BUN/APACHE II

Haloperidol Wang Crit Care Med 2005

Haloperidol prophylaxis decreases delirium incidence in elderly patients after noncardiac surgery: A randomized controlled trial*

Wei Wang, MD; Hong-Liang Li, MD; Dong-Xin Wang, MD, PhD; Xi Zhu, MD; Shuang-Ling Li, MD; Gai-Qi Yao, MD; Kai-Sheng Chen, MD; Xiu-E Gu, RN, BSN; Sai-Nan Zhu, MS

- Prophylactic haloperidol 0.5mg + 0.1mg/hr infusion
 - Fentanyl with all analgesia
 - Agitiation: 0.5-1mg haloperidol every 20 mins
 - Routine multicomponent intervention
- n = 457 randomised

Haloperidol Wang Crit Care Med 2005

Haloperidol prophylaxis decreases delirium incidence in elderly patients after noncardiac surgery: A randomized controlled trial*

Delirium 23.1% vs 15.3 %

We

Gai

•

Mean length of ICU stay shorter

No mortality difference No difference in side effects / safety profile

(pilot - 44.5% vs 23.3%)

Olanzapine Larsen Psychosomatics 2010

Administration of Olanzapine to Prevent Postoperative Delirium in Elderly Joint-Replacement Patients: A Randomized, Controlled Trial

- Prophylactic olanzapine 5mg preop
 - Premed midazolam & fentanyl
 - GA with fentanyl
 - Postop olanzapine 5mg
 - Regular fentanyl, PCA + opioids
- n = 495 randomised
 - >65yo / <65 + Hx POD Dementia exclusion

Olanzapine Larsen Psychosomatics 2010

Administration of Olanzapine to Prevent Postoperative

Delirium 40.2 % vs 14.3 %

Duration of delirium longer 1.6 vs 2.2 days

Severity scores higher (DRS-Max)

• >65yo / <65 + Hx POD Dementia exclusion

Melatonin De Jonghe CMAJ 2014

Effect of melatonin on incidence of delirium among patients with hip fracture: a multicentre, double-blind randomized controlled trial

- Prophylactic melatonin 3mg for 5 nights
 - Surgery day 1 or 2
- n = 444 randomised
 - >65yo Excluded incident delirium & ICU
 - Placebo group: more regular benzos, less Hx POD

Melatonin De Jonghe CMAJ 2014

Effect of melatonin on incidence of delirium

Delirium same 25.5 % vs 29.6 %

Duration of delirium same

Severity scores higher (DRS-Max)

>65yo Excluded incident delirium & ICO

a

d

• Placebo group: more regular benzos, less Hx POD

Problems with drugs in POD

- May have unintended consequences
 - Falls, prolong QT, extrapyradimal effects

Evaluation of Discontinuation of Atypical Antipsychotics Prescribed for ICU Delirium

- May be continued after episode
 - 47% left on beyond ITU
 - 71% of them discharged on drug

Jasiak J Pharm Prac 2013

What shall we use?

- Limited literature in surgery
- Multicomponent intervention works well
- System wide changes best
- Avoid prophylactic drugs for POD
- Haloperidol drug of choice
- Benzos for alcohol/benzo withdrawal
- Use on individual basis only

What can we do?

Cognitive trajectories



Nadelson, Sanders and Avidan. 2014. Br J Anaes 112(3):440-51



Yellow-AMT < 7Blue $-AMT \ge 7$ White-no data

Our surgical population



The prevalence and impact of undiagnosed cognitive impairment in older vascular surgical patients. Partridge. Journal of Vascular Surgery 2014

Our surgical population



The prevalence and impact of undiagnosed cognitive impairment in older vascular surgical patients. Partridge. Journal of Vascular Surgery 2014

Our surgical population

MMSE: Mean 24 (45% abnormal)

MOCA: Mean 21 (84% abnormal)

88% unrecognised cognitive problem

The prevalence and impact of undiagnosed cognitive impairment in older vascular surgical patients. Partridge. Journal of Vascular Surgery 2014 "You don't make a pig fatter by weighing the pig" – Don Berwick



Why do we risk assess?










And cognition is just one bit



This is complicated...







Comprehensive Geriatric Assessment



The impact of pre-operative comprehensive geriatric assessment on postoperative outcomes in older patients undergoing scheduled surgery: a systematic review

Comprehensive Geriatric Assessment

Holistic, multidimensional, interdisciplinary assessment of an individual

Formulation of

- list of needs and issues to tackle
- individualised care plan
- tailored to an individual's needs, wants and priorities

...works as it allows...

Risk assessment

- (un)recognise comorbidity, disability, frailty
- assess functional reserve

Optimise

- Medical, functional, psychological & social
- Apply organ specific guidelines
- Use multidisciplinary interventions

...and facilitates...

Collaborative decision making

- Harm vs benefit
- Consent, capacity, advance directives
- Communication

Putting it all together (1)

Domain	Assessment		
Joyce : 86 year old – total hip replacement			
Cognition	Progressively worse Agitated last admission – Long LOS		
Alcohol	Drinks half bottle wine a day		
Medications	Constant knee pain Now on sleeping pills		
Renal failure	eGFR 28 - hypertension		
Constipation	Analgesia related		

Putting it all together (2)

Domain	Assessment	Intervention	On discharge
Cognition	MoCA 19	Diagnose Discuss risk Inform ward	Memory services

Putting it all together (3)

- On the ward
 - Review daily
 - Manage risk factors
 - Involve family
 - Support nursing staff
 - Falls and skin protocols
 - Manage sedatives
 - Support for discharge

Practicalities







....providing continuity of care throughout the pathway



Admission on day of surgery Detailed info to anaesthetist

So... does it work?

POPS	Pre n = 54	Post n = 54
Age	75	74
Delirium	18.5%	5.6%
Pneumonia	20%	4%
ACS	7.4%	3.7%
Arrhythmia	13%	7.4%
Heart failure	3.7%	0
Thrombosis	11%	2%
Wound sepsis	22.2%	3.7%

POPS. Harari. Age Ageing 2007

What can we all do

- THINK Delirium
- System wide processes
- Collaborate across specialties
- Integrate care across perioperative pathway



What can you do locally?

- Is there a Lead for Geriatric Anaesthesia?
- What is the remit of an anaesthetist in perioperative pathway?
- How should we train in perioperative medicine?
- What can geriatricians do for you?

SPECIAL ARTICLE

Postoperative Delirium in Older Adults: Best Practice Statement from the American Geriatrics Society

The American Geriatrics Society Expert Panel on Postoperative Delirium in Older Adults

Postoperative delirium is recognized as the most common surgical complication in older adults, ^{1,2} occurring in 5% to 50% of older patients after an operation.³⁻⁵ With more than one-third of all inpatient operations in the United States being performed on patients 65 years or older,⁶ it is imperative that clinicians caring for surgical patients understand optimal delirium care.

Delirium is a serious complication for older adults because an episode of delirium can initiate a cascade of deleterious clinical events, including other major postoperative complications, prolonged hospitalization, loss of functional independence, reduced cognitive function, and death.⁷⁻¹² The annual cost of delirium in the United familiar with caring for brain dysfunction despite its increasing clinical impact. The purpose of this postoperative delirium in older adults best practices guideline is to equip the health care professional caring for older adults in the perioperative setting with a set of evidence-based recommendation statements regarding the optimal care of older adults with delirium. The specific topics addressed are listed in Table 1. This best practices document accompanies a postoperative clinical practice guideline simultaneously published by the same group.¹⁹

POSTOPERATIVE DELIRIUM EXPERT PANEL

The postoperative delirium in older adults guideline proj-





What can you do locally?

- Is there a Lead for Geriatric Anaesthesia?
- What is the remit of an anaesthetist in perioperative pathway?
- How should we train in perioperative medicine?
- What can geriatricians do for you?

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