

# Increasing post-operative delirium in cardiac surgery patients.



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## Introduction – why is it a problem?

- CTUs can expect to encounter pts with post-operative delirium/psychosis
- Can be difficult and time consuming to manage
- Impacts on care of other patients especially in HDU & ward with lower staffing ratios
- ? Increasing number of patients requiring medication to manage their symptoms
- Concerns raised regarding proper management: Haloperidol/need for incapacity forms
- Current NHS Grampian rapid tranquillisation guideline conflicts with existing CTU practice

# Introduction - stats

Afonso, Scurlock, Reich et al (2010) post-op delirium in cardiac surgery pts – inc'd age and inc'd length of surgery independently associated with post-op delirium

SCTS 6<sup>th</sup> National Adult Cardiac Surgical Database Report 2008:

1. Increase in mean age for most categories of surgery, Pts >75yrs account for more than 20% of all cardiac Sx
2. Latterly, 25% of pts for CABG alone were >75yrs
3. No mention of psychosis

# Objectives

- To identify whether or not there had been an increase in cases of treated psychosis/ delirium.
- To obtain evidence relating to safe and effective prescribing for post-operative psychosis/ delirium in cardiothoracic surgery patients.

# Methods

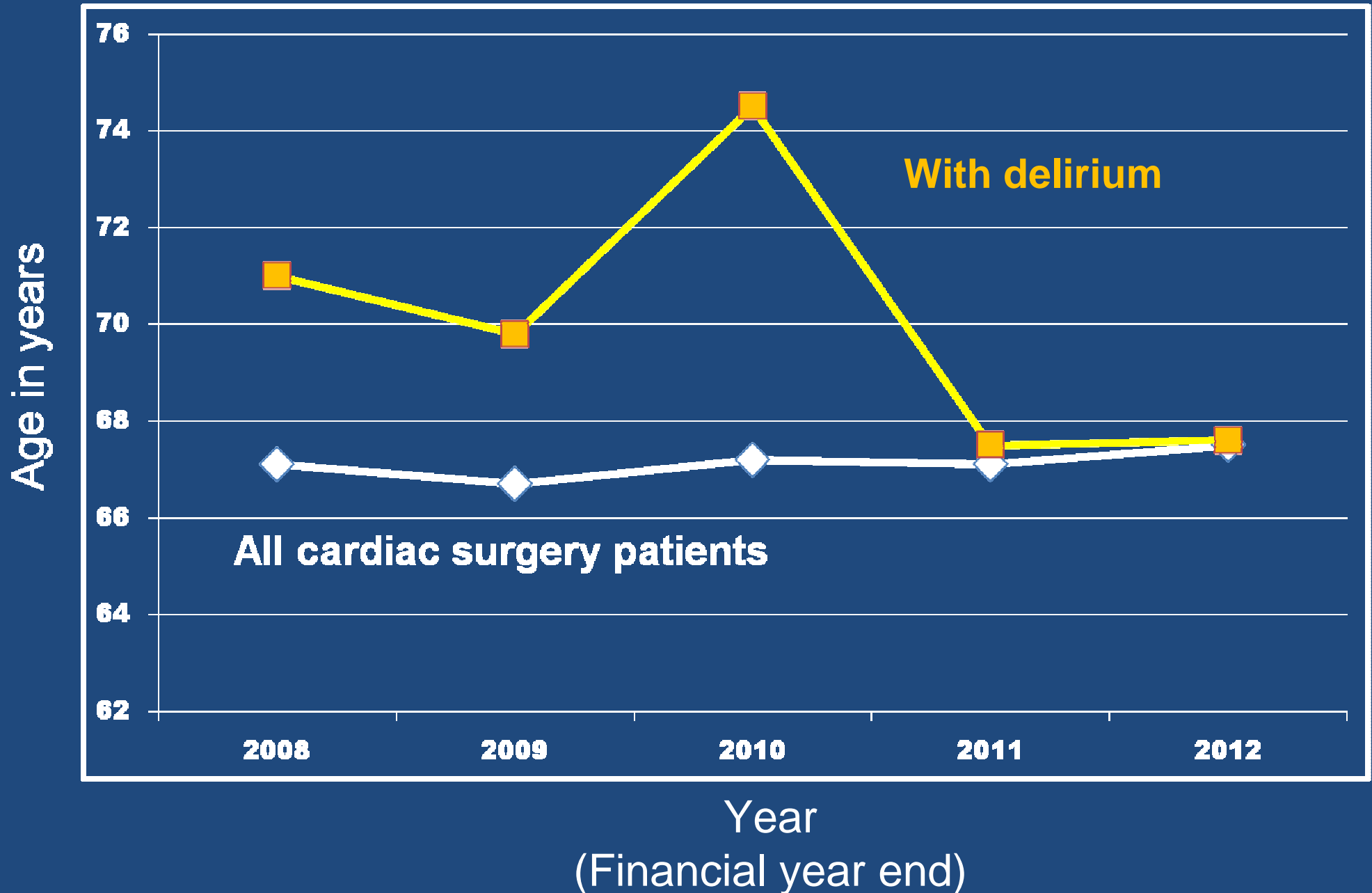
- TOMCAT to identify trends with respect to age and psychosis in cardiac surgery patients.
- Literature search to identify evidence for optimum management of post-op delirium/
  - psychosis.
- Consultation with colleagues in other CTUs as to their experiences and management methods.

# Results 1 -

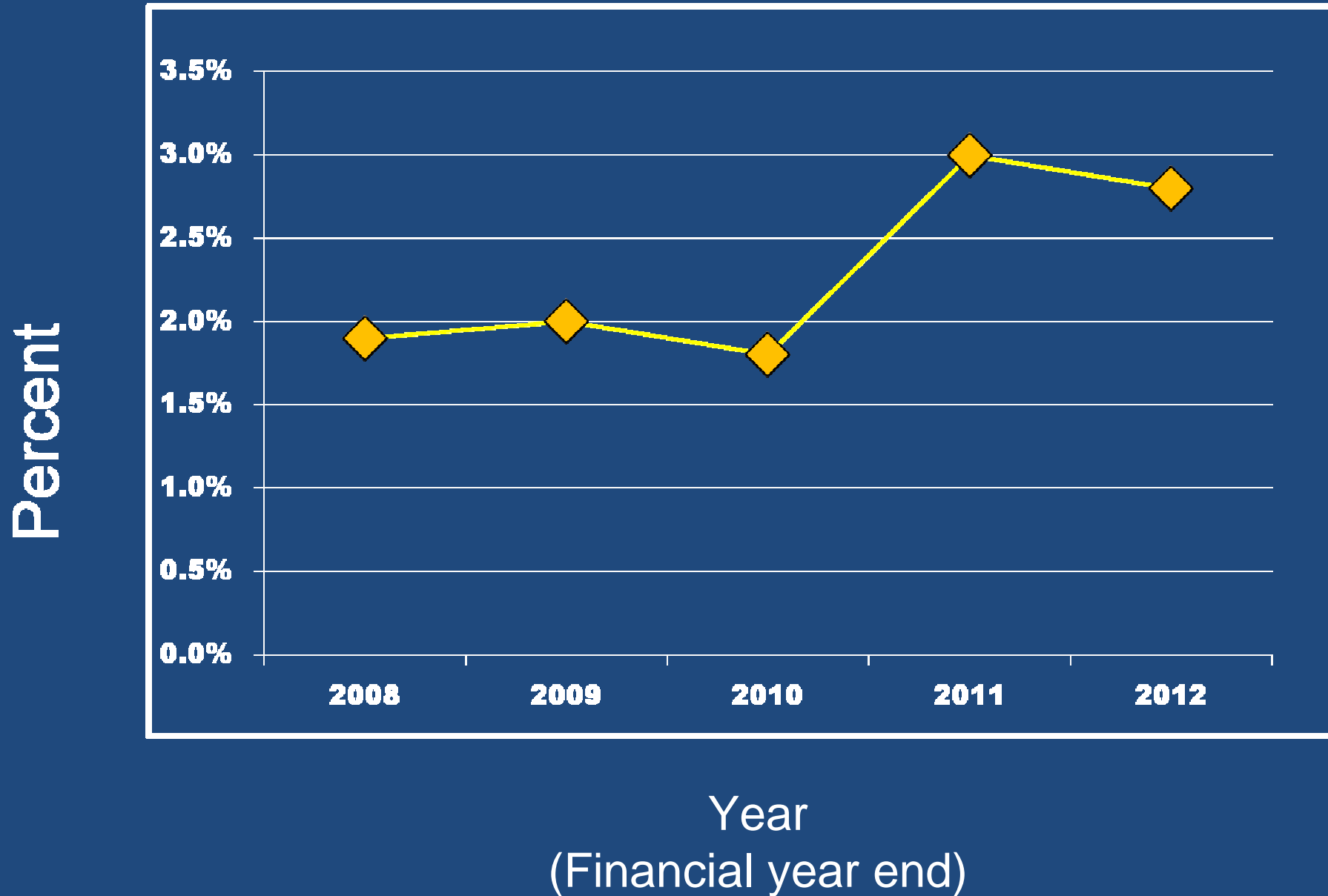
## Cardiac Surgery, Age and Psychosis Statistics Aberdeen

Year (Apr-Mar)	Cardiac Sx cases	Mean age (SD)	CABG alone	Pts >75yrs	% Pts >75yrs	Cases of Psychosis*	Mean age of Pt with psychosis	% Pts with psychosis
2007-08	619	67.1 (10.72)	392	101	25.76%	12	71.0	1.9%
2008-09	608	66.7 (10.42)	365	71	19.45%	12	69.8	2.0%
2009-10	596	67.2 (10.53)	362	89	24.58%	11	74.5	1.8%
2010-11	531	67.1 (11.25)	335	91	27.16%	16	67.5	3.0%
2011-12	501	67.5 (10.84)	284	77	27.11%	14	67.6	2.8%
2007-2012	2855	67.1	1738	429	24.68	65	70.0	2.3%

# Mean ages of cardiac surgery patients



# Percentage of cardiac surgery patients with treated delirium





## Results 2 - literature

- BestBETs 2011 – Rapid tranquilisation in acute psychotic agitation: Olanzapine vs Haloperidol – both effective
- BestBETs 2010 – Is haloperidol superior to risperidone in managing delirium? - Risperidone should be considered for 1<sup>st</sup> line.
- BestBETs 2004 Is haloperidol or a benzodiazepine the safest treatment for acute psychosis in the critically ill pt? – Haloperidol should be considered the first line for agitated pts post cardiac surgery, however lorazepam either alone or in conjunction with haloperidol is an acceptable alternative.

## Results 2 - literature

- Grover, Kumar, Chakrabarti (2011) Comparison of haloperidol, vs olanzapine and risperidone in treatment of delirium – possibly fewer side effects, small number of subjects.
- Wang, Mabasa, Loh et al (2012) - haloperidol dosing regimes in critical care patients: identified haloperidol as being the preferred agent for treatment of delirium in this setting because of lack of haemodynamic effects and rapid onset of action
- Wan, Kasliwal, McKenzie et al (2011) Quetiapine in refractory hyperactive and mixed intensive care delirium – showed some benefit, but very small sample number
- Skrobic (2011) on delirium prevention and treatment – “all conventional and atypical antipsychotics appear to be equally efficacious in the treatment of psychosis, and at present there is no evidence of differential effects on delirium”

## Results 3 – Responses from other CTUs

- Enquiry via SCTS for strategies employed by CTUs (42 adult units listed)
- 11 units responded
- Variety of approaches ranging from advice on drugs only through to comprehensive approach incorporating pre-assessment, on-going monitoring and algorithms for management

# Results 3 – Responses from other CTUs

Hospital	Specific CTU Policy:	Pre assess't	Routine PostOp	Formal Rx ass't advice	Drugs of choice*	Notes
Golden Jubilee	NO				<b>Haloperidol</b>	Intensivist group considering policy
Guy' & St Thomas	NO					Want to develop
Liverpool Heart & Chest	YES	NO	NO	NO	<b>As per NICE: Haloperidol/ Olanzapine</b>	Nursing Mx
**Manchester	YES	YES	RASS +/- CAM-ICU	YES	<b>1.Haloperidol or 2.Olanzapine</b>	Add Midazolam for dangerous motor activity
Papworth	NO	NO	CAM-ICU	NO	<b>Haloperidol or Olanzapine</b>	Use NICE Delirium guideline
Royal Infirmary (Edinburgh)	YES	NO	NO	YES	<b>1.Haloperidol; 2.AddMidazolam</b>	Maintenance with haloperidol or risperidone
Royal Victoria (Belfast)	NO					Currently developing
Univ Hosp Wales	YES	NO	NO	NO		Criteria for restraint (physical or chemical)
Univ Coventry & Warwickshire	YES	NO	NO	YES	<b>1.Haloperidol/Risperidone; 2.Add Lorazepam</b>	
**Victoria Hosp (Blackpool)	YES	YES	RASS+/- CAM-ICU	YES	<b>1.Haloperidol or 2.Olanzapine</b>	Add Midazolam for dangerous motor activity
Wythenshawe Hosp	YES	YES	YES	NO		

\*Most also had advice for alcohol withdrawal  
 \*\*Use Blackpool Teaching Hospitals Policy

# Discussion

Evidence to support perceived increase in post-op delirium/  
Psychosis.

Literature suggests age and length of operative procedure prime culprits, but further research required as local stats show no clear link with age – next SCTS report awaited. From NP perspective irrelevant, focus on management.

Evidence to support use of Haloperidol, other treatments should also be considered.

No consistent approach to problem between CTUs, haloperidol favoured for pharmacological management.

Local hospital policies and national legislation need to be considered.

# Discussion – legal aspects

- Mental Health (Care and Treatment) (Scotland) Act 2003 – should detention be considered necessary
- Adults with Incapacity (Scotland) Act 2000 – section 47, most relevant to provision of necessary short term treatment,
- Particularly if that treatment is provided in order to prevent harm or deterioration in the patients condition.

# Discussion – legal aspects

## ADULTS WITH INCAPACITY (SCOTLAND) ACT 2000 -CODE OF PRACTICE (Second Edition)

FOR PRACTITIONERS AUTHORISED TO CARRY OUT MEDICAL TREATMENT OR RESEARCH UNDER PART 5 OF  
THE ACT. EFFECTIVE FROM 31 January 2008

Key points in part 2

- Part 5 of the Act gives a general authority to treat a patient who is incapable of consenting to the treatment in question, on the issuing of a certificate of incapacity.
- The general principles of the Act must be applied by the practitioner who issue such a certificate and giving treatment under it.
- The common law authority to treat a patient in an emergency situation remains in place.
- The general authority may not be used where a proxy has been appointed and it would be reasonable and practicable for the practitioner who issued the certificate to obtain their consent.

# Discussion - ? Produce guideline

?CTU guideline on delirium in cardiac surgery patients to provide safe initial management pending senior review.

- Pre-op assessment? Criteria? How?
- Prevention strategies?
- Post-op assessment? When? What? Who? How?
- Interventions? Pharmacological/Non pharmacological
- Algorithm for selection of medication?
- CTU as a whole or specific to CITU/ Ward & HDU?
- Need to audit for delirium? Pre and Post implementation?

Management of post-op delirium complex with many factors for consideration both medical and legal.

Teamwork important – comprehensive guideline may improve that by clarifying roles and responsibilities.



# Conclusions

- Cases of post-operative delirium after cardiac surgery appear to be increasing. This needs further investigation both locally and nationally.
- Optimum management requires further study (NICE 2010)
- Suggest use of guidelines beneficial for safe and effective management.

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