Medically Assisted Hydration for adults receiving palliative care

A review of current guidance



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Overview

- Background – what is medically assisted hydration
- Current recommendations for standard care
- Cochrane Review explored
- CHELsea II trial



Background: Medically Assisted Hydration (MAH)

- Common to have reduction in oral intake in last days of life
- Several factors contribute:
  - Dysphagia, nausea, bowel obstruction, anorexia/cachexia syndrome, fluctuating consciousness, loss of desire to drink
- Does administering fluids help or hinder?
- Disparity between individuals/sites/cultures
  - Dutch study found 74% of dying hospitalised patients received intravenous hydration, compared with 2% of dying hospice patients

Neuberger, 2013
Lokker ME *et al.*, 2019

Current UK guidance – 2015 NICE Guidance Care of Dying Adults in the Last Days of Life

- Support dying person to drink if they wish to
- Offer frequent mouthcare
- Encourage loved ones to support



- Assess hydration status, preferably daily – review need for MAH
- Discuss risks and benefits of MAH
  - Therapeutic trial

NICE CKS - Standard Care

- The management of dry mouth should be included in the person's care plan



- Review medications

- Carry out mouth care as often as necessary to maintain a clean mouth
  - If conscious – every 30 minutes, water spray or dropper, ice chips
  - If unconscious – moisten mouth at least every hour
  - Lip care – petroleum jelly or water soluble lubricant



Assessing hydration status

- Could use biochemical markers
  - Routine blood tests have usually ceased
  - ?accuracy of biochemical markers and correlation with symptoms of poor hydration
- Being guided by the patient and their loved ones

- *'At that stage we all recognise we're treating the relatives and not the patient. . . best interests does include some reference to your sort of family and cultural background, but the primary driver is generally accepted to be what actually is going to be of benefit, or not, to the patient. . . It's not going to do a massive harm, but it's certainly not going to do anything particularly good. And so it's just that reticence to hook people up to bags of fluid that are probably pointless.'*

- *'for show. . . a trick from the medical profession'*

Kingdon A *et al.*, 2022

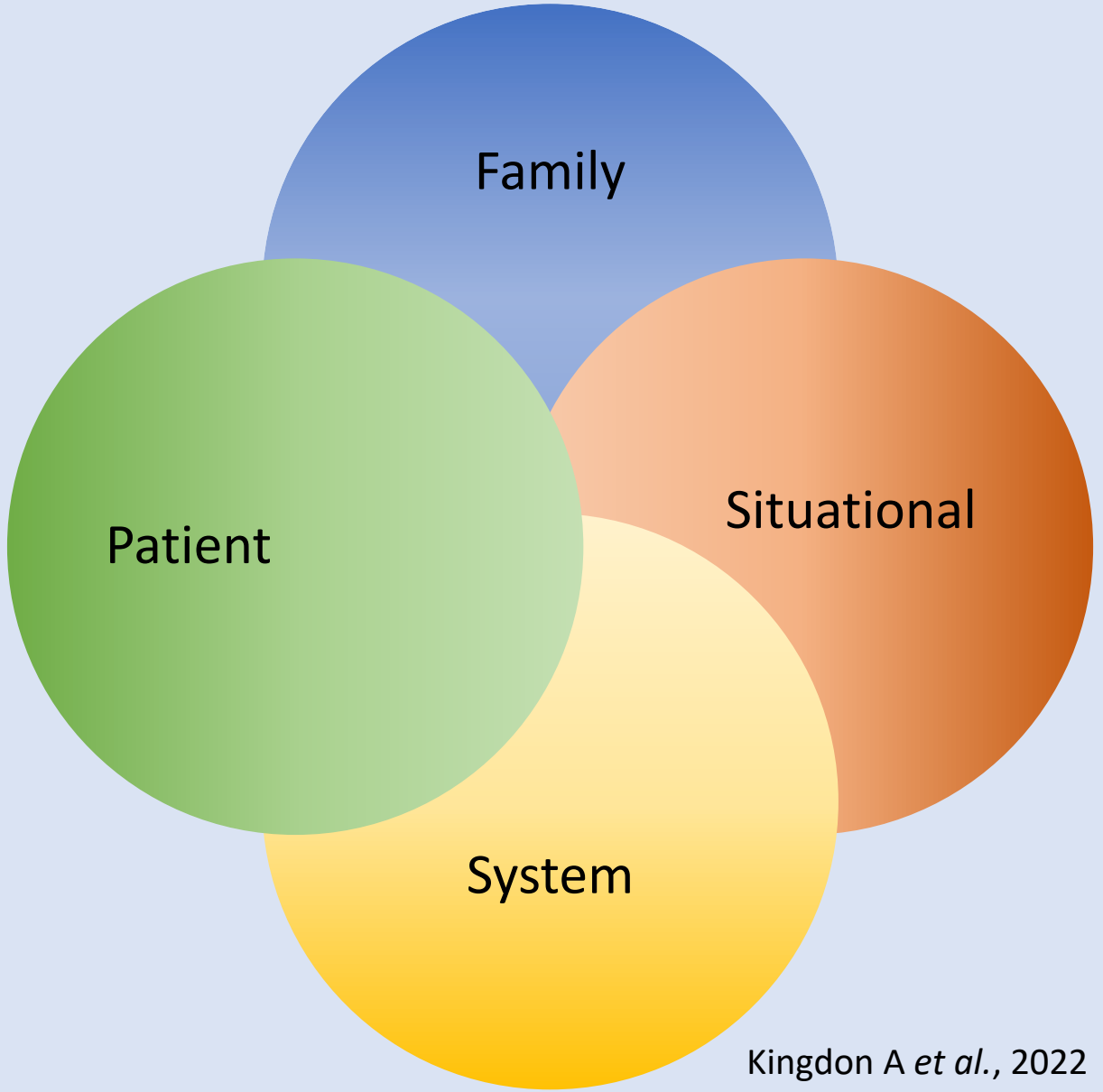
Decision Making – *give or continue*

Patient Factors
Unresolved thirst
Conscious level
Prolonged dying process

Family Factors
Family request
Perceived high bereavement risk

Situational Factors
Prognostic uncertainty
Buying time/using it as a bridge

System Factors
(If assisted hydration is already being provided)
Understaffing
Lack of trust or rapport
Late recognition of dying



Kingdon A *et al.*, 2022

Decision Making – *do not give*

Patient Factors

Fluid overload
Risk of raised ICP
GI secretions
Stated wishes

Family Factors

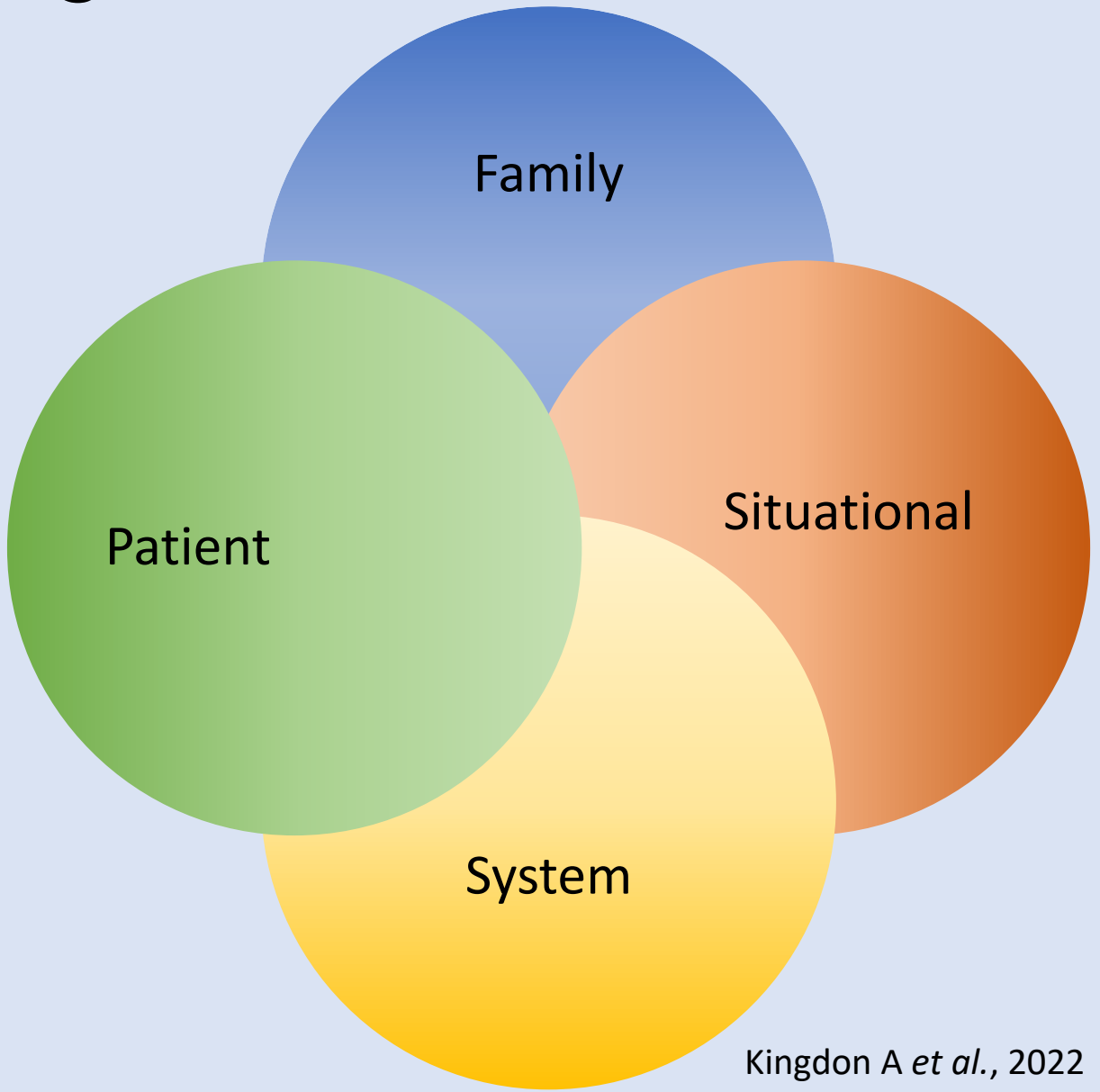
Family accepts dying

Situational Factors

Greater prognostic certainty

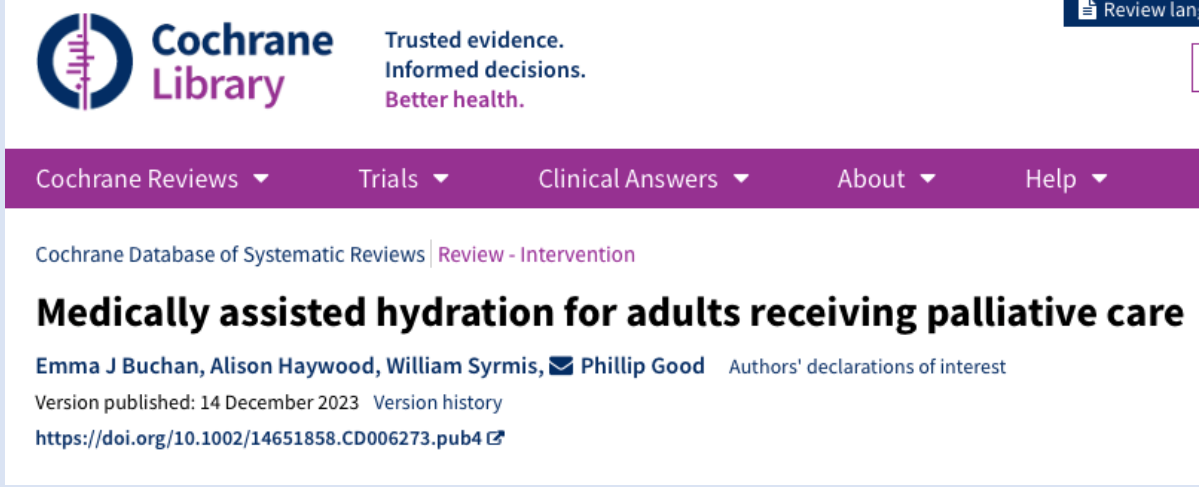
System Factors

Skilled communication
Lack of community provision



Kingdon A *et al.*, 2022

Cochrane Review



- Originally published Issue 2, 2008
  - Updated Feb 2011, March 2014

- Criteria for inclusion:
  - Comparison of MAH to placebo/standard care
- All relevant RCTs included

- Aim: determine if effect of MAH on
  1. Quality of Life (QoL)
  2. Survival
  3. Potential for adverse effects

Buchan EJ *et al.*, 2023

About the RCTs

- Only 1 additional study Davies *et al*. 2018 (200 participants)
- Total 4 studies (422 participants)
- All participants had diagnosis of advanced cancer (29 haematological, 393 solid organ tumours)

- Largest study n = 200
- Smallest study n = 42
- Duration: 2-14 days
- Age range 28-98 years
- 226 women, 196 men
- USA, UK, Argentina



Study Designs

Study	Participants	Intervention	Comparator	Outcomes	Adverse events
Bruera *et al.*, 2005					
Bruera *et al.*, 2013					

Edmonton Symptom Assessment System: Numerical Scale

Please circle the number that best describes:

No pain	0	1	2	3	4	5	6	7	8	9	10	Worst possible pain
Not tired	0	1	2	3	4	5	6	7	8	9	10	Worst possible tiredness
Not nauseated	0	1	2	3	4	5	6	7	8	9	10	Worst possible nausea
Not depressed	0	1	2	3	4	5	6	7	8	9	10	Worst possible depression
Not anxious	0	1	2	3	4	5	6	7	8	9	10	Worst possible anxiety
Not drowsy	0	1	2	3	4	5	6	7	8	9	10	Worst possible drowsiness
Best appetite	0	1	2	3	4	5	6	7	8	9	10	Worst possible appetite
Best feeling of wellbeing	0	1	2	3	4	5	6	7	8	9	10	Worst possible feeling of wellbeing
No shortness of breath	0	1	2	3	4	5	6	7	8	9	10	Worst possible shortness of breath
Other problem	0	1	2	3	4	5	6	7	8	9	10	

Patient's Name _____

Date _____ Time _____

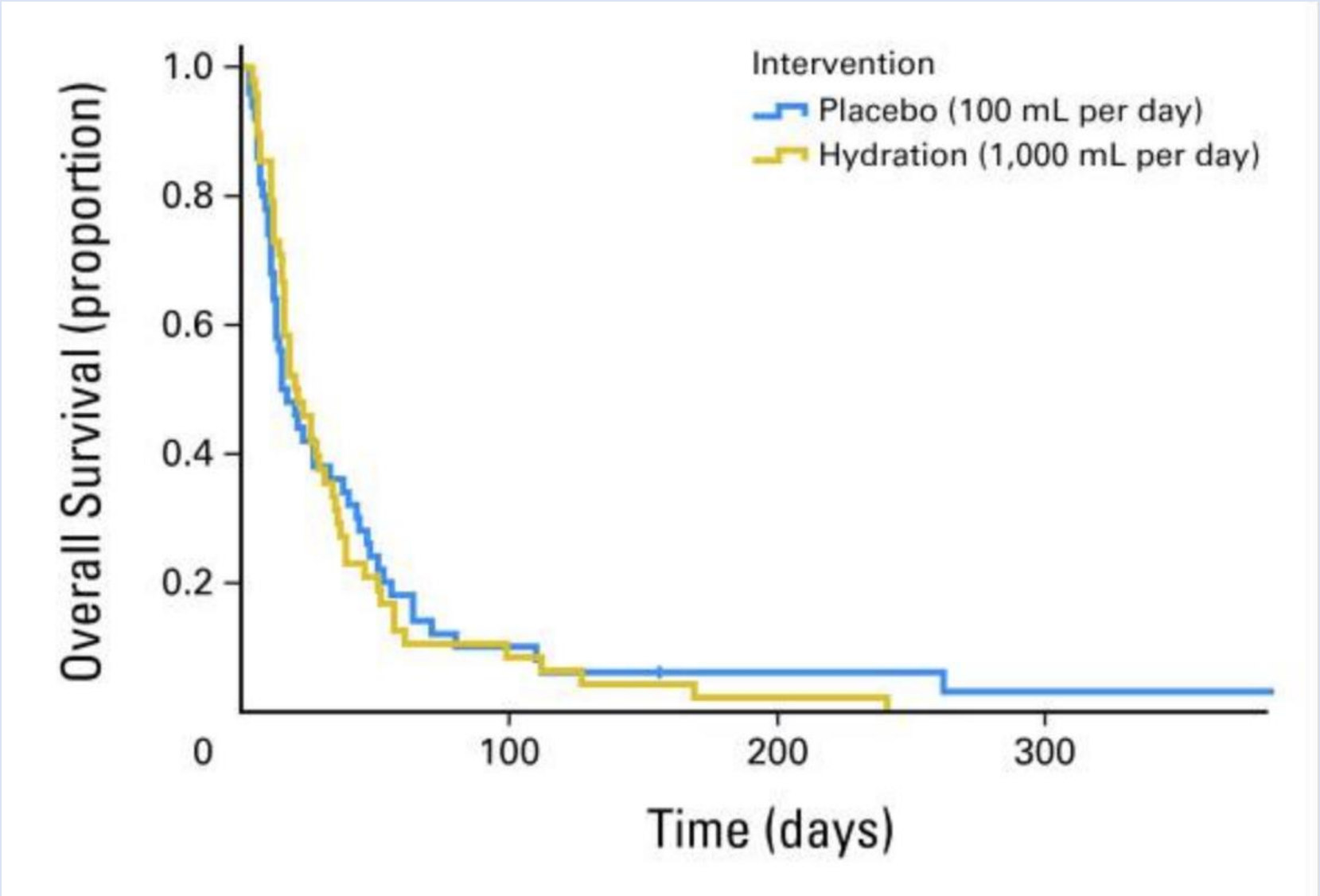
Complete by *(check one)*

- ☐ Patient
- ☐ Caregiver
- ☐ Caregiver assisted

Study	Participants	Intervention	Comparator	Outcomes	Adverse events
Cerchietti *et al.*, 2000					
Davies *et al.*, 2018					

Analysis and Results

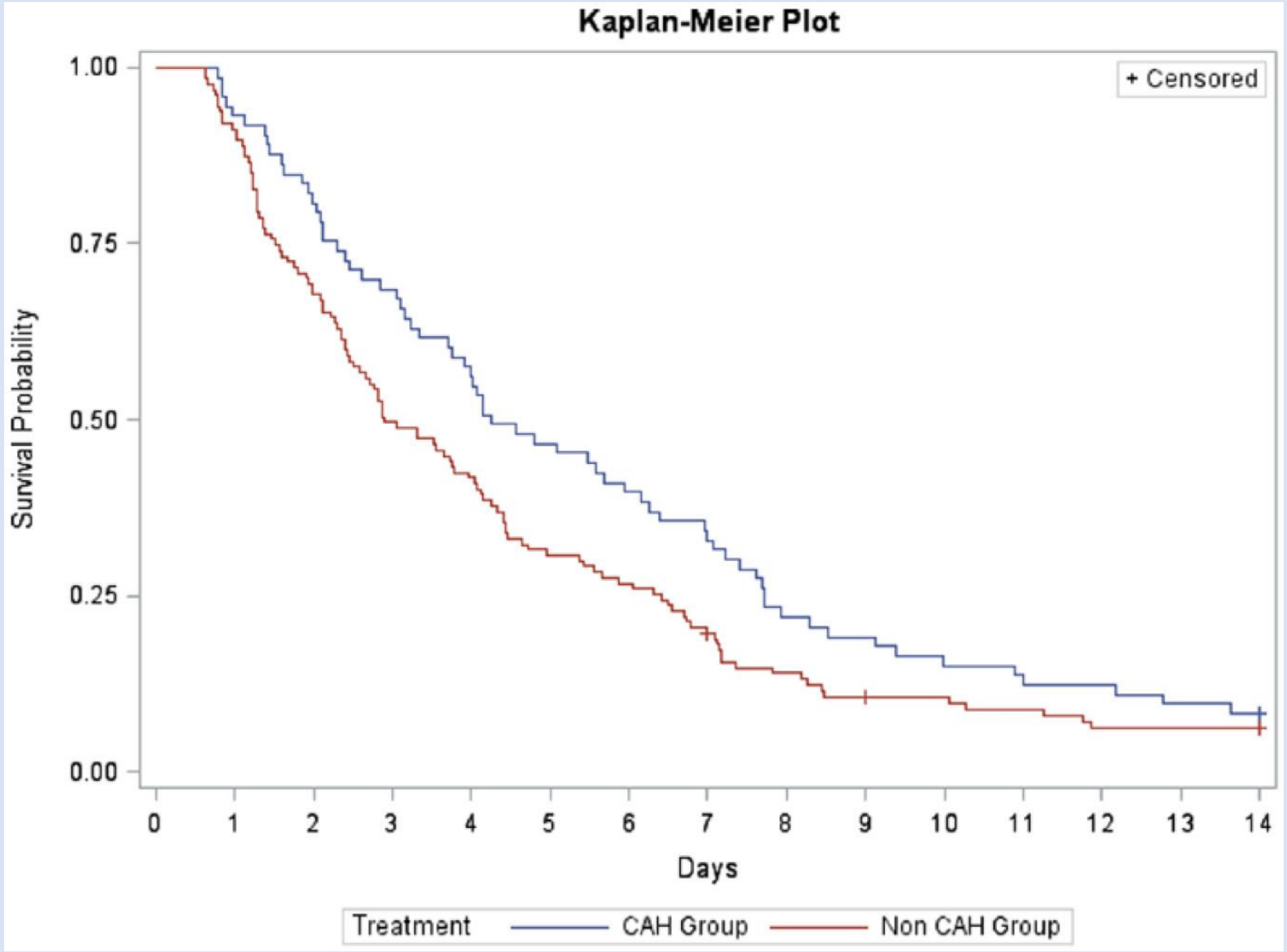
Study	Quality of life	Survival	Adverse events	Certainty of evidence/GRADE
Bruera *et al.*, 2005	-	-		
Bruera *et al.*, 2013				



Bruera *et al.*, 2013

Study	Quality of life	Survival	Adverse events	Certainty of evidence/GRADE
Bruera *et al.,* 2005	-	-	Mean injection site pain control 1.75 Intervention group 0.35 (-1.19 – 1.89 CI95%)	Low risk: Selection bias Performance bias Detection bias Attrition bias Reporting bias VERY LOW GRADE
Bruera *et al.,* 2013	Mean difference in QoL between Day 0 and 7: 2.6 control group 4.10 in intervention group (-1.63 – 9.83 CI95%)	Cochrane Team unable to estimate HR Clear from paper, no difference	-	Low risk: Selection bias Performance bias Detection bias Attrition bias Reporting bias VERY LOW GRADE

Study	Quality of life	Survival	Adverse events	Certainty of evidence/GRADE
Cerchietti *et al.*, 2000	-	-		
Davies *et al.*, 2018	-	HR 0.36 (0.22 – 0.59 CI95%)		



Davies *et al.*, 2018

Study	Quality of life	Survival	Adverse events	Certainty of evidence/GRADE
Cerchietti *et al.*, 2000	-	-	RR 11.62 (1.62 – 83.41)	Unclear risk: Selection bias Performance bias Detection bias Attrition bias Reporting bias VERY LOW GRADE
Davies *et al.*, 2018	-	HR 0.36 (0.22 – 0.59)		Low risk: Attrition bias Reporting bias Unclear risk: Allocation concealment (selection bias) High risk: Performance bias Detection bias VERY LOW GRADE

Limitations

- Three main factors reducing confidence in evidence
- 1) only applied to people with advanced cancer
- 2) small study sizes, limited number of studies
- 3) performance and detection bias – participants aware which treatment they were getting

- Limited community settings
- Different interventions



Cochrane Discussion

- Insufficient data to undertake meta-analyses
- ***QoL***: uncertain whether MAH improves cf placebo (no data vs standard care)
- ***Survival***: uncertain when compared to placebo or standard care
- ***Adverse events***: uncertain – meta-analysis possible when compared to standard care, but certainty of evidence is low

Does alleviation of symptoms equate to or have linear relationship to improvement in QoL?

Implications for Practice

- Insufficient evidence to support or refute use of MAH for adults receiving palliative care to improve QoL or survival

- Clinicians need to make decisions based on perceived risk and benefits on individual basis

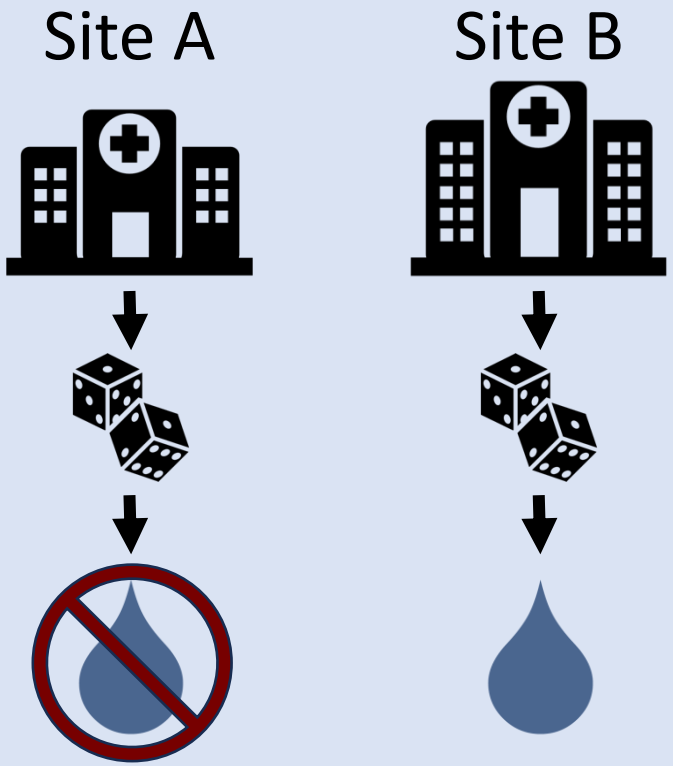


CHELsea II

- Aim:
  - To assess whether giving patients in last days of life MAH is effective at preventing delirium/terminal agitation

- Hypothesis:
  - Medically Assisted Hydration in the last days of life reduces the frequency of delirium (and the requirement for sedative medication), as a result of preservation of renal function, and prevention of build-up of drugs and toxins

Design/Methods



- 80 hospices/hospitals in UK
- 1600 patients in last week of life
- Cluster randomised trial, unblinded

- Intervention A – support patient to drink, regular mouth care, management of pain and other symptoms
- Intervention B – all of the above, and MAH

- Consent from patient themselves, “personal consultee”, “nominated consultee” (HCP)

Inclusion

A. Any sex
B. Age ≥ 18 yr
C. Estimated prognosis of ≤ 1 week [Clinical opinion - MDT]
D. Patient unable to maintain sufficient oral fluid intake (i.e., < 1L/day)



Exclusion

A. Patient is dehydrated (patient eligible for inclusion after correction of dehydration)
B. Patient has a relevant Advance Directive to Refuse Treatment (ADRT)
C. Clinical indication for CAH
D. Clinical contraindication to CAH
E. Contraindication to cannulation
F. Total parenteral nutrition/enteral feeding in situ
G. Patient has had delirium in last 24 hr
H. Patient has had audible upper airway secretions in last 24 hr
I. Patient likely to be transferred elsewhere for end-of-life care
J. Patient has clinically significant cardiac failure
K. Patient has clinically significant renal failure as deemed by clinical team
L. Patient has clinically significant dementia as deemed by clinical team (potential false positives on delirium screening)

Study Details

- Primary objective:
  - The proportion of participants that develop delirium at any point during the trial

- Fluid can be given IV or SC
- 4% dextrose, 0.18% sodium chloride
- Volume dependent on weight
  - based on 25ml/kg/day
- If recent weight unavailable/not possible, clinical team may estimate current weight



Administration: Intravenously (if intravenous cannula is present) or subcutaneously (if no intravenous cannula is present).

Fluids: Dextrose Saline (4% Dextrose,0.18%Sodium Chloride)

Volume: As per NICE guidance= 25ml/kg/day

Participant's weight	Volume of fluid
≤ 40 kg	1 L
50 kg	1.25 L
60 kg	1.5 L
70 kg	1.75 L
≥ 80 kg	2 L

Trial Assessments

- Review every 4 hours by the clinical team

- Following assessments completed:
  - Nursing Delirium Screening Scale (Nu-DESC score)
  - Modified-Richmond Agitation Sedation Scale (M-RASS score)
  - Presence of audible upper airway secretions, pain, SOB, N&V
  - Presence of adverse effects of MAH

Nu-DESC Score

Features and description	Symptom rating
1. Disorientation Verbal or behavioural manifestation of not being oriented to time or place or misperceiving persons in the environment	0 – absent 1 – present but not severe 2 – severe
2. Inappropriate behaviour Behaviour inappropriate to place and/or for the person; e.g., pulling at tubes or dressings, attempting to get out of bed when that is contraindicated, and the like	0 – absent 1 – present but not severe 2 – severe
3. Inappropriate communication Communication inappropriate to place and/or for the person; e.g., incoherence, non-communicativeness, nonsensical or unintelligible speech	0 – absent 1 – present but not severe 2 – severe
4. Illusions / hallucinations Seeing or hearing things that are not there; distortions of visual objects	0 – absent 1 – present but not severe 2 – severe
5. Psychomotor retardation Delayed responsiveness, few or no spontaneous actions/words; e.g., when the patient is prodded, reaction is deferred and/or the patient is unarousable	0 – absent 1 – present but not severe 2 – severe
Total score	

Table 1 – Nursing Delirium Screening Scale (Nu-DESC) [23].

CHELsea II Aims/Outcomes

- Each site aiming to recruit 20 patients
- Locally, we have recruited 15 patients so far

- Sufficiently powered to detect 10% reduction in incidence of delirium

- This could potentially provide rationale for offering MAH to all hospice/hospital patients at EOL



Final Thoughts/Clinical Implications

- Implications on place of death
- To date, studies have only included patients with cancer
- The intricacies of communication when uncertainty so rife
- Hospice versus hospital



HQIP, National Audit of Care at the End of Life, 2020

Cabañero-Martínez MJ *et al.*, 2019

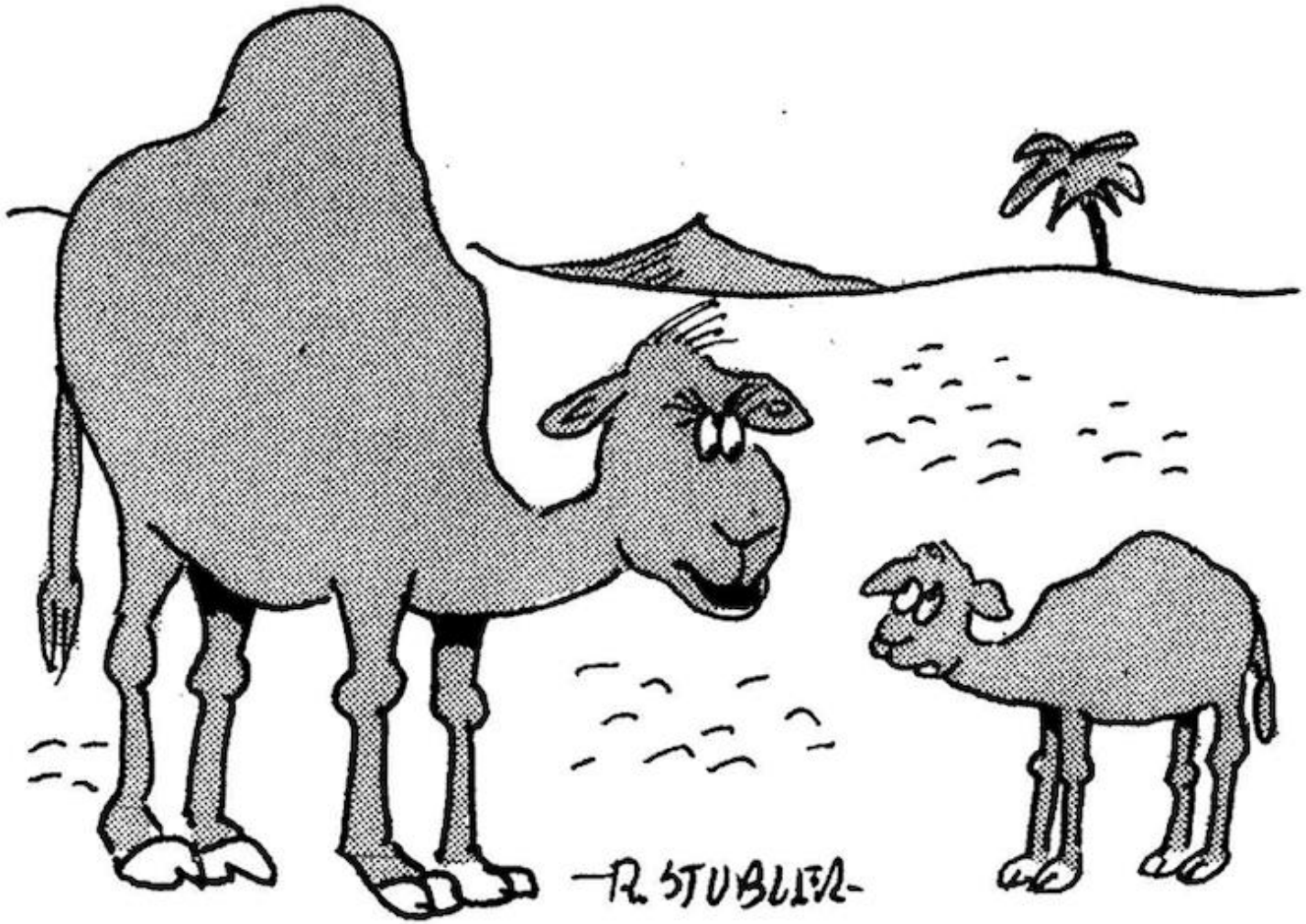
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- https://www.gov.uk/government/publications/review-of-liverpool-care-pathway-for-dying-patients

Thankyou for listening!

Any Comments/Questions?



"WHAT DO YOU MEAN YOU'RE THIRSTY?
YOU HAD A DRINK JUST LAST WEEK."