What else is new – symptoms?

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Clinically assisted nutrition & hydration

Clinically-assisted nutrition (CAN)

Alderman B et al. Multinational Association of Supportive Care in Cancer (MASCC) expert opinion / guidance on the use of clinically assisted nutrition in patients with advanced cancer.

(Approved by MASCC Guideline Committee; submitted to MASCC journal – Supportive Care in Cancer).

Clinically-assisted nutrition (CAN)

1 - All patients with advanced cancer should have regular nutritional assessments [Level of evidence - V; category of guideline - suggestion].

2 - Patients with nutritional problems should be reviewed by a specialist dietitian (with / without other members of the nutrition support team) [Level of evidence - V; category of guideline - suggestion].

3 - Any decision to initiate clinically assisted nutrition should be made by an appropriately constituted multidisciplinary healthcare team together with the patient and their family [Level of evidence - V; category of guideline - suggestion].

Clinically-assisted nutrition (CAN)

Factors influencing the decision to initiate CAN in patients with advanced cancer:

- Estimated prognosis*
- Current nutritional status
- Oral intake
- Nutritional impact symptoms
- Systemic inflammation
- Cancer stage / trajectory

Clinically-assisted nutrition (CAN)

Factors influencing the decision to initiate CAN in patients with advanced cancer:

- Options for further anticancer treatment
- Performance status
- Co-morbidities
- Patient preference
- Gastrointestinal tract functioning
- Logistics (of providing CAN)

Clinically-assisted nutrition (CAN)

4 - Clinically assisted nutrition should be considered in patients with an inability (reversible / irreversible) to ingest sufficient nutrients [Level of evidence - V; category of guideline - suggestion].

5 - Clinically assisted nutrition should be considered in patients with an inability (reversible / irreversible) to absorb sufficient nutrients [Level of evidence - V; category of guideline - suggestion].

6 - Clinically assisted nutrition should be considered in patients at risk of dying from malnutrition before dying from their cancer [Level of evidence - V; category of guideline - suggestion].

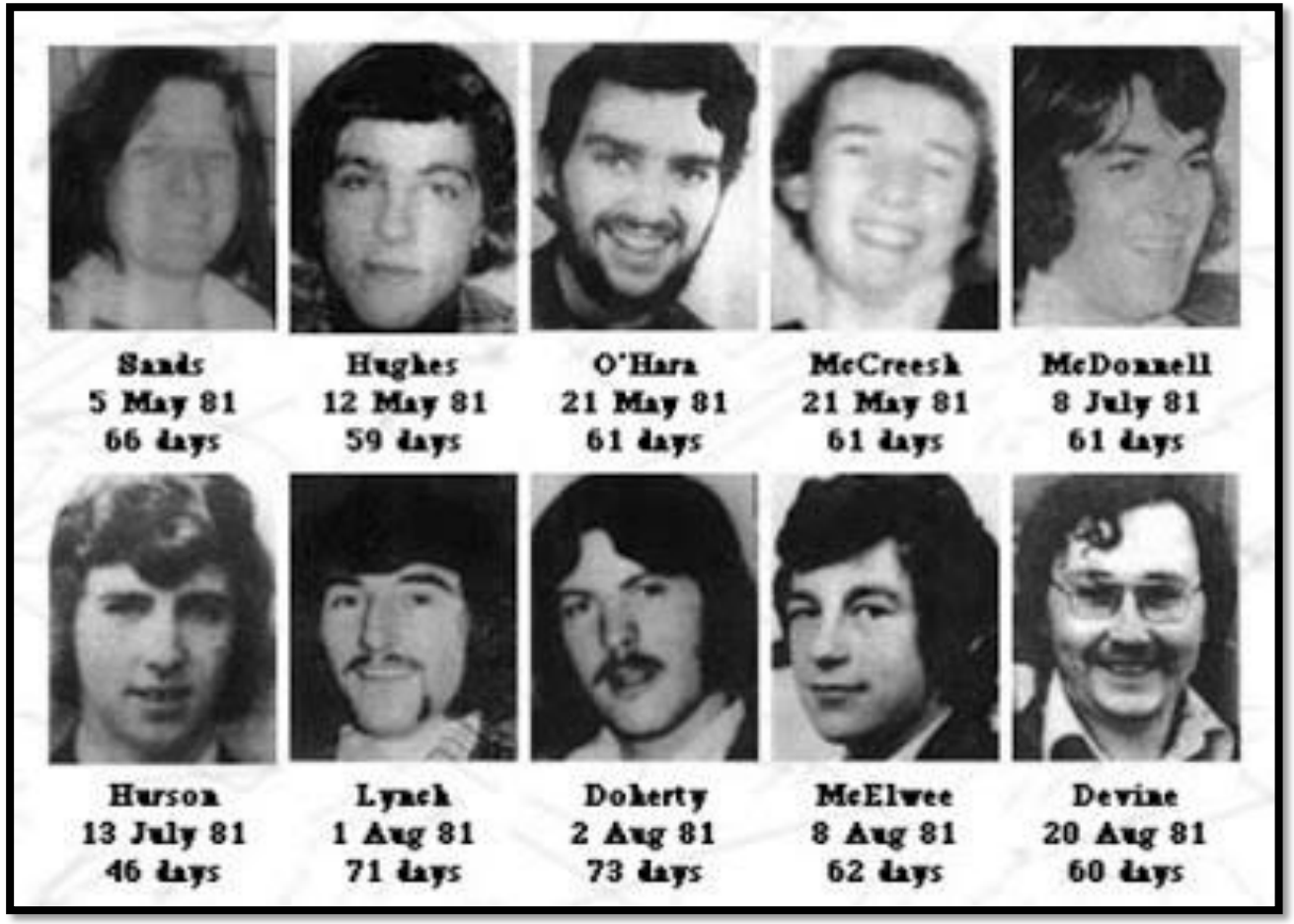
Clinically-assisted nutrition (CAN)

7 - Clinically assisted nutrition is not indicated for the treatment of cancer cachexia [Level of evidence - V; category of guideline - suggestion].

8 - Protocols / processes should be in place to deal with conflicts over the initiation (or withdrawal) of clinically assisted nutrition [Level of evidence - V; category of guideline - suggestion].

9 - Patients receiving clinically assisted nutrition should have a nutritional care plan which defines the agreed objectives of treatment, and the agreed conditions for withdrawal of treatment [Level of evidence - V; category of guideline - suggestion].

Clinically-assisted nutrition (CAN)



Clinically-assisted nutrition (CAN)

“the data indicates that young healthy adult males with no intake will starve to death in ~ 2 months, and this time period is expected to be “considerably reduced” in patients with cancer. Thus, our suggestion is that relevant cancer patients with an estimated prognosis of >1 month should be considered for CAN, but that cancer patients with a prognosis of days to short weeks should generally not be considered for CAN (unless there is another indication…)”.

“The other potential indications for CAN in this cohort of patients is management of hunger (and thirst), and “preserving” of quality of life. However, it is unclear what the specific criteria are for the latter indication”.

Clinically-assisted nutrition (CAN)

“our suggestion is that in cases of uncertainty (prognosis), a trial of CAN should be considered (with precise criteria for continuation / discontinuation)”.

Clinically-assisted nutrition (CAN)

10 - Enteral tube feeding is generally preferable to parenteral nutrition (if possible) [Level of evidence - 1; category of guideline - recommendation].

11 - Clinically assisted nutrition should be available in all settings, including the home setting [Level of evidence - IV; category of guideline - suggestion].

12- All patients receiving clinically assisted nutrition should be regularly reassessed [Level of evidence - V; category of guideline - suggestion].

Clinically-assisted nutrition (CAN)

“The rationale involves lower adverse effects, ease of usage, and lower direct costs (and similar effectiveness). In terms of adverse effects, a recent meta-analysis determined that enteral tube feeding is associated with fewer infectious complications (e.g. wound infection, pneumonia), but similar levels of non-infectious complications (e.g. nausea and vomiting, diarrhoea), as compared to parenteral nutrition”.

Clinically-assisted hydration

Clinically-assisted hydration

"The Review panel considers that the current version of the LCP, version 12, does not go far enough to adjust the language of the previous version, to advise that the default course of action should be that patients be supported with hydration and nutrition unless there is a strong reason not to do so."

"If fluids are stopped without review over many days, death from dehydration will be inevitable, the lack of hydration having accelerated the dying process".

Neuberger et al, 2013

Clinically-assisted hydration

"Without water, humans can survive only for days"

Popkin et al, 2010

"3 minutes without air, 3 days without water, and 3 weeks without food"

Anonymous

Science

70 kg man:

Water

- 60% total body weight

- 42 litres

  25 l intracellular fluid; 17 l extracellular fluid

  (3-4 l plasma; 11-14 l interstitial fluid)

Science

Average intake /day

- 1500 ml beverages
- 750 ml food
- 250 ml metabolism

Science

Average output /day

- 1500 ml urine
- 700 ml insensible loss (skin, lungs)
- 200 ml sweat
- 100 ml faeces

Clinically-assisted hydration

Kingdon A et al. What is the impact of clinically assisted hydration in the last days of life? A systematic literature review and narrative synthesis. BMJ Support Palliat Care 2021; 11: 68-74.

Clinically-assisted hydration

“Fifteen studies were included in the synthesis. None were judged to be both of high quality and relevance. No evidence was found that the provision of CAH has an impact on symptoms or survival”.

“There is currently insufficient evidence to draw firm conclusions on the impact of CAH in the last days of life”.

Clinically-assisted hydration

Study	Number of subjects	Type of subjects	Intervention	Study duration
Cerchietti et al, 2000	42	[Patients with dehydration]	1 L / day	48 hr
Bruera et al, 2005	51 (49)	Patients with dehydration	1 L / day	48 hr
Bruera et al, 2013	129 (102)	Patients with dehydration	1 L / day	"Until the patient was unresponsive, develop -ed progressive coma, or died"

Clinically-assisted hydration

“If patients need iv fluids for routine maintenance alone, restrict the initial prescription to 25-30 ml / kg / day of water and approximately 1 mmol / kg / day of potassium, sodium and chloride and approximately 50-100 g / day of glucose to limit starvation ketosis”.

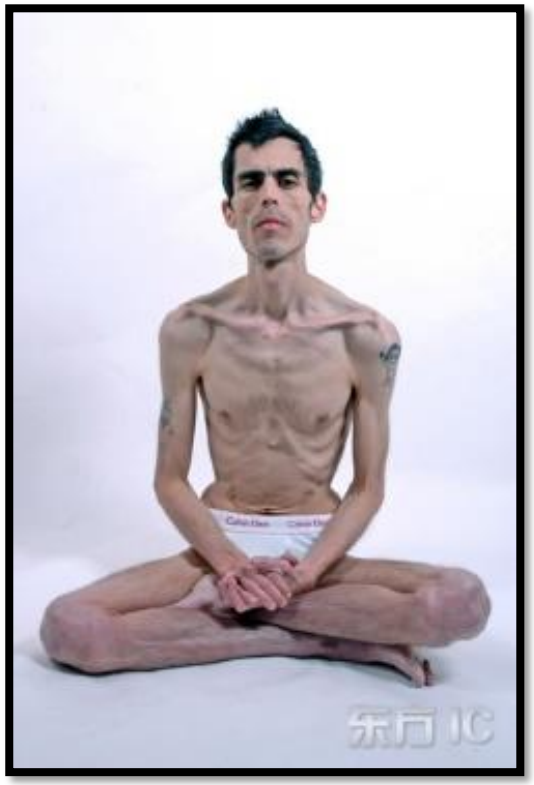
“Do not exceed 30 ml / kg / day for routine fluid maintenance, and consider prescribing less fluid (for example 25 ml / kg / day) for patients who are older or frail *or* have renal impairment of cardiac failure”.

NICE, 2013/17

NICE guidance

1750 – 2100 ml / 24hr

Clinically-assisted hydration



1000 ml / 24hr (40 kg)

CHELsea I study

Clinically-assisted Hydration at End of Life I study

CHELsea study

Hypothesis:

CAH during the last few days of life reduces the frequency of hyperactive delirium (“terminal agitation”) in cancer patients as a result of the maintenance of renal perfusion and the prevention of accumulation of toxins and drugs (i.e. prevention of dehydration).

CHELsea I study

- Feasibility study
- Cluster randomised trial
- Variable consent process
- “Standard” interventions

CHELsea study

Aim (definitive study):

- Evaluate the utility / role of CAH in cancer patients in the last days of life.

Aim (feasibility study):

- Answer the question, “can this study (*the definitive study*) be done”?
- Evaluate the study methodology

CHELsea study

Primary outcome measure:

- Frequency of hyperactive delirium (“terminal agitation”)

Secondary outcome measures:

- Frequency of other end-of-life symptoms
- Frequency adverse events
- Use of medication
- Survival
- [Process evaluation]

CHELsea study

Criteria success (feasibility study):

- 200 patients recruited in 1 year
- ≥ 67% participants complete the study
- ≥ 67% nursing observations are completed on the observation charts
- ≤ 50% participants have CAH discontinued due to treatment-related adverse events

CAH study

Sites randomised to treatment (“standard treatment”)

Cluster representation mechanism set up

Study gatekeeper appointed

Study guardian appointed

CHELsea study

Standard intervention A:

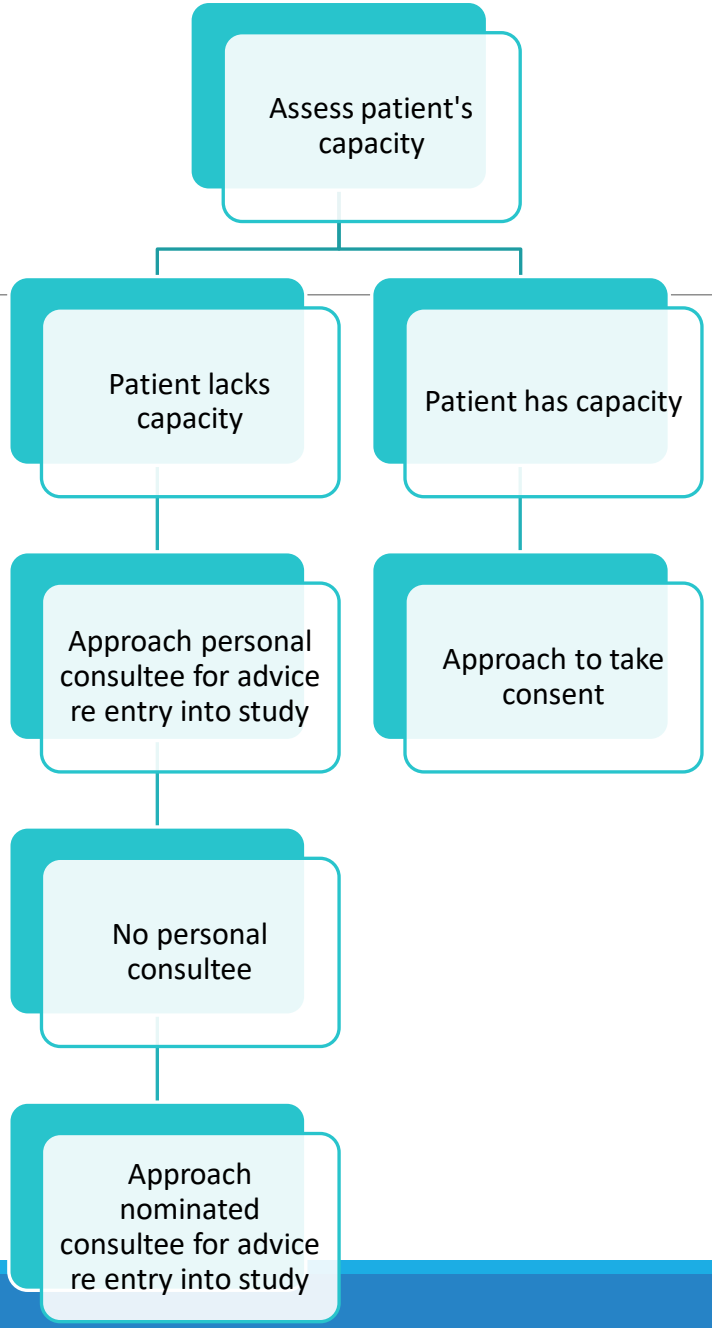
- Continuance of oral intake (if appropriate)
- Regular “mouth care”
- Standard management of pain and other symptoms in the terminal phase

Standard intervention B:

- Continuance of oral intake (if appropriate)
- Regular “mouth care”
- Standard management of pain and other symptoms in the terminal phase
- Clinically-assisted hydration, i.e. parenteral fluids

CHELsea study

PATIENT'S WEIGHT	VOLUME OF FLUID
< 45 kg	1L / 24hr
45-60 kg	1.5 L / 24hr
> 60 kg	2 L / 24hr


Assess patient's capacity
Patient lacks capacity
Patient has capacity
Approach personal consultee for advice re entry into study
Approach to take consent
No personal consultee
Approach nominated consultee for advice re entry into study

CHELsea study

Inclusion criteria:

- Diagnosis of cancer
- Age ≥ 18 yr
- Estimated prognosis of ≤ 1 week
- Patient unable to maintain sufficient oral intake (1L / day – measured / estimated)

CHELsea study

Exclusion criteria:

- Patient clinically dehydrated
- Patients with a relevant ADRT
- Clinical indication for CAH
- Clinical contra-indication to CAH
- Clinical contra-indication to peripheral cannulation
- Intravenous fluids / subcutaneous fluids / total parenteral nutrition (TPN) / enteral feeding or fluids already being administered
- Patient likely to be transferred to another setting for end of life care (e.g. home, hospice)

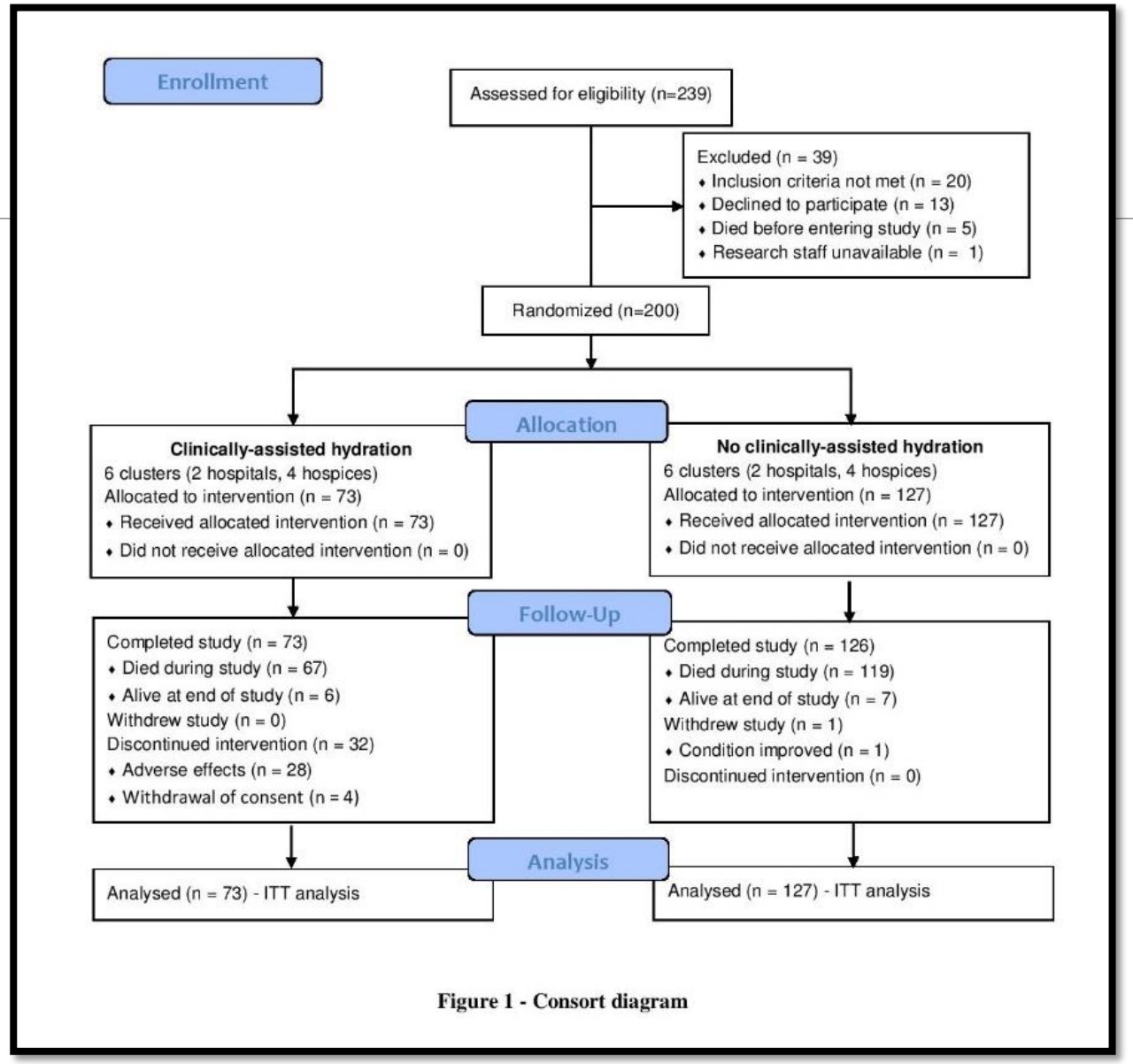


Figure 1 - Consort diagram

Results

Consent process:

- 16 patients consented
- 23 patients enrolled following agreement of nominated consultee
- 161 patients enrolled following agreement of personal consultee

CHELsea study

CRITERIA FOR SUCCESS	OUTCOME
200 patients recruited in 1 year	√
≥ 67% participants complete the study	√ (99.5%)
≥ 67% nursing observations are completed on the observation charts	√ (93.4%)
≤ 50% participants have CAH discontinued due to treatment-related adverse events	√ (43.8% - total; 38.4% AEs)

Results

Primary end-point - no clinically significant difference between two groups (but other measures of delirium were clinically different between the two groups)

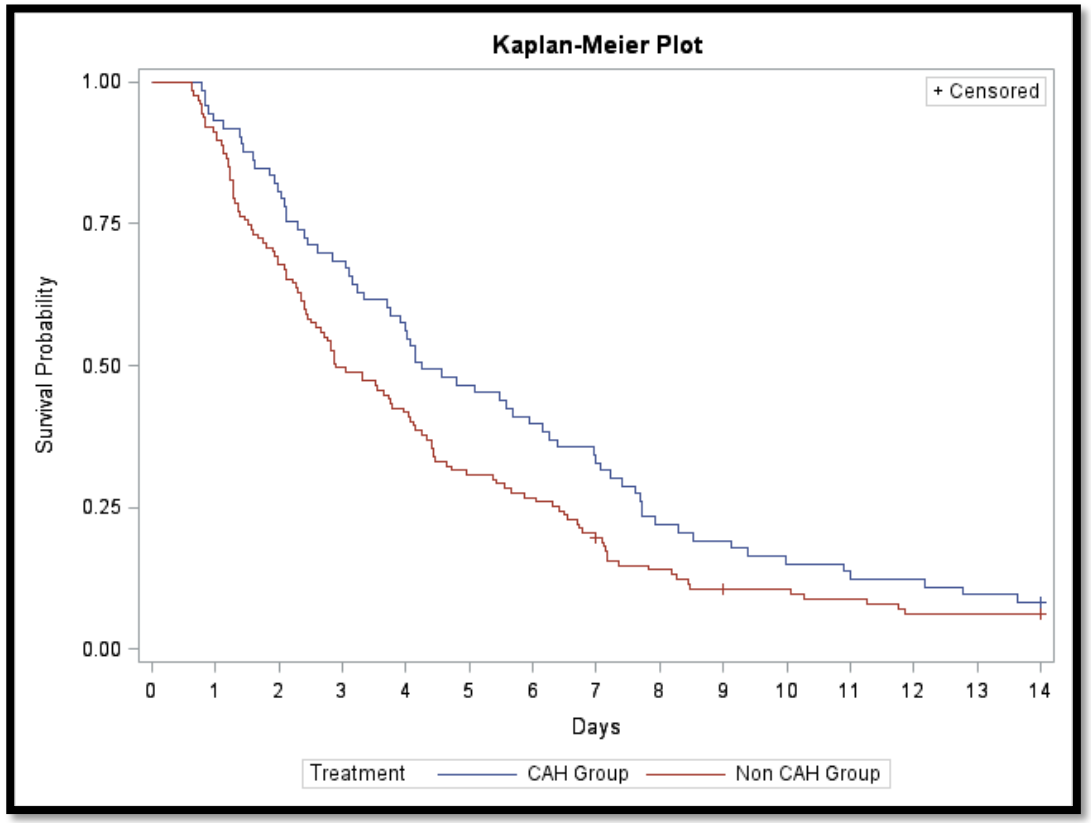
CHELsea study

Endpoint	CAH group	Non-CAH group	Comment
Primary endpoint	17.8%	16.5%	
Number patients given prn Rx for agitation	65.7%	64.5%	
Number patients given regular Rx for agitation	46.5%	59.1%	
Mean time to first dose prn Rx for agitation	65.06 (7.92) hr	48.49 (6.05) hr	p = 0.0989

CHELsea study

Endpoint	CAH group	Non-CAH group	Comment
Number patients with “death rattle”	53.4%	52.0%	
Number patients given prn Rx for death rattle	50.7%	44.1%	
Number patients given regular Rx for death rattle	21.9%	24.4%	
Mean time to first dose prn Rx for death rattle	116.00 (11.11) hr	57,82 (8.45) hr	p <0.001

CHELsea I study



- Median survival non-CAH group = 2.90 days
- Median survival CAH group = 4.26 days
- p = 0.0387
- Average Hazard Ratio = 0.736 [95% CI: 0.456-1.187].

CHELsea II study

Clinically-assisted Hydration at End of Life II study