Journal Watch

Parenteral Hydration in Patients With Advanced Cancer: A Multicenter, Double-Blind, Placebo-Controlled Randomized Trial

Presented by Serena Cheung, FM2, October 17, 2013

Reference: Bruera E, Hui D, Dalal S, Torres-Vigil I, Trumble J, Roosh J, Krauter S, Strickland C, Unger K, Palmer J, Allo J, Frisbee-Hume S, Tarleton K. J Clin Oncol. 2013 Jan 1;31(1):111-

Abstract

Purpose The vast majority of patients with cancer at the end of life receive parenteral hydration in hospitals and no hydration in hospice, with limited evidence supporting either practice. In this randomized controlled trial, we determined the effect of hydration on symptoms associated with dehydration, quality of life, and survival in patients with advanced cancer. **Patients and Methods** We randomly assigned 129 patients with cancer from six hospices to receive parenteral hydration (normal saline 1 L per day) or placebo (normal saline 100 mL per day) daily over 4 hours. The primary outcome was change in the sum of four dehydration symptoms (fatigue, myoclonus, sedation and hallucinations, 0 = best and 40 = worst possible) between day 4 and baseline. Secondary outcomes included Edmonton Symptom Assessment Scale (ESAS), Memorial Delirium Assessment Scale (MDAS), Nursing Delirium Screening Scale (NuDESC), Unified Myoclonus Rating Scale (UMRS), Functional Assessment of Chronic Illness Therapy–Fatigue (FACIT-F), Dehydration Assessment Scale, creatinine, urea, and overall survival. Intention-to-treat analysis was conducted to examine the change by day 4 ± 2 and day 7 ± 2 between groups. **Results** The hydration (n = 63) and placebo (n = 66) groups had similar baseline characteristics. We found no significant differences between the two groups for change in the sum of four dehydration symptoms (−3.3 *v* −2.8, *P* = .77), ESAS (all nonsignificant), MDAS (1 *v* 3.5, *P* = .084), NuDESC (0 *v* 0, *P* = .13), and UMRS (0 *v* 0, *P* = .54) by day 4. Results for day 7, including FACIT-F, were similar. Overall survival did not differ between the two groups (median, 21 *v* 15 days, *P* = .83). **Conclusion** Hydration at 1 L per day did not improve symptoms, quality of life, or survival compared with placebo.

Strengths:

- Multicenter, double-blind, placebo-controlled, randomized
- No patient was lost to follow up
- Used validated assessment scales and outcomes that are meaningful
- Qualified research nurses carried out assessments referred from the hospice team, allowing more consistent comparison between patients.

Weaknesses:

- Difficult to truly blind patients between the 1 L NS versus 100 mL NS per day
- Placebo consisted of a small amount of fluid. Is this enough to improve symptoms and quality of life?
- Patients included were located in hospices, not hospitals, which is more relevant to our patient population
- Severely dehydrated patients were excluded (ex. decreased blood pressure, decrease level of consciousness). Would these patients possibly benefit from hydration?
- Did not control for oral fluid intake
- Relatively small sample size
- Did not address harm in fluids

Relevance to Palliative Care: This paper suggests the possibility that hydration in patients with advance cancer does not improve hydration symptoms, quality of life, or survival. This study can help providers educate and reassure families or patients who request aggressive hydration. Unfortunately, the possible harm and side effects with IV fluids was not addressed.