

focused on the management or treatment for fatigue in end-of-life, hospice or palliative care were included. Review articles or those that did not meet minimum quality score were excluded. Twenty-seven articles were included in the analysis.

**Data Extraction and Synthesis.** Study purpose, sample, design and results were extracted from each article. Using the matrix method, commonalities were further analyzed both within and across the sample.

**Results.** 85% of the articles were quantitative and focused on describing presentation of the symptom and/or treatment. Ten of the papers focused on symptom clusters with the diagnosis of cancer to be the most common illness antecedent associated with fatigue. Both pharmacological and non-pharmacological approaches were identified but few randomized control trials focusing exclusively on fatigue management were found.

**Conclusion and Implications for Practice, Policy, and Research.** Research aimed at addressing best practices for fatigue management at the end of life are lacking, particularly those involving randomized trials. Few papers focusing exclusively on fatigue were found, and this symptom is most widely included in papers that examine symptom clusters, most often in cancer patients. Studies focused on examining and comparing fatigue treatment in cancer and non-cancer illnesses should be considered.

### ***Pediatric Cardiothoracic Surgeons and Palliative Care: A National Survey Study (S851)***



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#### *Objectives*

1. Outline pediatric cardiothoracic surgeons' understanding and use of pediatric palliative care.
2. Describe the barriers perceived by pediatric cardiothoracic surgeons to palliative care consultation.

**Original Research Background.** Among children with heart disease who die in the hospital, the majority occur within the first year of life in an intensive care setting. Discrepancies in understanding of prognosis and perceptions of suffering between parents and physicians caring for children with heart disease have been identified. While pediatric cardiology and

palliative care (PC) provider attitudes towards PC have been described, no studies have assessed the perspectives of pediatric cardiothoracic surgeons (CTS).

#### **Research Objectives.**

- Evaluate pediatric CTS understanding and use of PC.
- Describe barriers perceived by pediatric CTS to PC consultation.

**Methods.** A survey was distributed electronically to pediatric CTS in the United States. Subjects were excluded if they did not have a pediatric component to their practice. The survey consisted of 22 primarily closed-ended questions with multiple choice answers.

**Results.** Of the 220 CTS who were mailed the survey, 36 opened the survey and 5 did not meet inclusion criteria (n=31). Median years of practice was 23.5 and 87.1% were male. Almost all (90%) reported that they had experience consulting PC. While 68% felt PC consultation was initiated at the appropriate time, 29% felt it occurred too late. When asked the appropriate timing for PC consultation in patients with hypoplastic left heart syndrome, 45% selected "at time of prenatal diagnosis" and 30% selected "when surgical and transcatheter options have been exhausted." Common barriers to PC involvement included the perception of "giving up" (40%) and concern for undermining parental hope (36%).

**Conclusion.** While a majority of pediatric CTS are familiar with PC, there is variation in perception of appropriate timing of consultation and significant barriers to consultation still exist.

**Implications for Research, Policy, or Practice.** This is a preliminary study to better understand the attitudes of pediatric CTS regarding PC. Results will help inform future research and educational efforts for physicians caring for children with advanced heart disease.

### ***Patterns of Anti-Cancer Therapy Use in the Last 14 Days of Life in a Community Cancer Institute (S852)***



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#### *Objectives*

1. Define the costs of providing aggressive end of life care.

2. Describe population most likely to receive anti-cancer therapy at end of life in a community cancer center.
3. Discuss implications and potential application of these findings.

**Original Research Background.** Studies have shown that aggressive cancer care at end of life is associated with decreased quality of life, decreased median survival, and increased cost of care.

**Research Objectives.** This study describes the patients most likely to receive aggressive anti-cancer therapy at the end of life in a community cancer institute.

**Methods.** We performed a retrospective review of 213 patients who received anti-cancer therapy in our institution and died between July 2016 and April 2017. Data collected included primary malignancy, death date, date of last anti-cancer treatment, hospice enrollment, healthcare utilization, Oncology Care Model (OCM) enrollment, and clinical assessments at last office visit prior to a treatment decision before death. Data were analyzed using univariate logistic regression to determine feature importance.

**Results.** Of the 201 patients who died of cancer, 36(17%) received anti-cancer therapy within the last 14 days of life. Several factors were significantly positively correlated with receiving anti-cancer therapy at end of life, including enrollment in OCM ( $p < 0.001$ ), frequency of hospital utilization ( $p < 0.001$ ), death in hospital ( $p < 0.001$ ), referral to hospice ( $p < 0.001$ ), and hematologic malignancy ( $p = 0.014$ ).

**Conclusion.** In our community cancer institute, enrollment in OCM, frequency of hospitalizations, death in a hospital, referral to hospice, and hematologic malignancy diagnosis were predictive of receiving aggressive anticancer therapy at the end of life, suggesting that these factors should have greater importance in our clinic.

**Implications for Research, Policy, or Practice.** Taken as a whole, these data will help inform clinicians and patients in choices regarding care near the end of life.

### *Palliative Care Education in U.S. Adult Neuro-Oncology Fellowship Programs (S854)*



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#### *Objectives*

1. Describe the current need for palliative education in neuro-oncology fellowship programs as identified by program directors.

2. List the preferred education methods and tools of neuro-oncology fellowship program directors for teaching palliative care to fellows.
3. Know which barriers program directors face when providing palliative care education for neuro-oncology fellows.

**Original Research Background.** Palliative care (PC) for patients with neuro-oncological diseases positively impacts morbidity and mortality. No studies have evaluated whether neuro-oncology fellows receive formal PC education during fellowship.

**Research Objectives.** The purpose of this study was to describe the PC education and identify education needs of US neuro-oncology fellowship programs.

**Methods.** Program directors (PDs) of US neuro-oncology fellowships were surveyed. The electronic survey included qualitative and quantitative questions.

**Results.** Of 26 programs fellows, 17 completed surveys (65% response rate) of which 3 (18%) offered no formal PC education. The methods most utilized were formal didactics (seminars/conferences) and self-directed reading materials. One-third of programs have developed their own teaching materials. Communication was the domain identified as most important, the domain fellows were most well-trained in, and the domain PDs felt most comfortable providing for their own patients. Addressing spiritual distress and initiating life-prolonging therapies were the domains PDs identified as being least important, fellows were least well trained in, and PDs were least comfortable providing for their own patients. Most programs (83%) were satisfied with the PC education available at their program. Time for teaching and faculty availability were the most common barriers.

**Conclusion.** Neuro-oncology PDs recognize the need for PC education, which is currently offered in some form by most programs, but the content and methods of delivery are heterogeneous. Interdisciplinary educational teams and nationally-available PC educational material may improve implementation of PC education in neuro-oncology.

**Implications for Research, Policy, or Practice.** This study implies the need for a dedicated neuro-oncology palliative education curriculum.

### *Patient and Family Caregiver Perspectives on Palliative Care Needs in End-Stage Liver Disease: A Qualitative Study (S855)*



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