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)

Ambereen Mehta, MD MPH, University of Virginia, Charlottesville, VA. Sarah Verga, DO, University of Virginia, Charlottesville, VA. Camilo Fadul, MD, University of Virginia, Charlottesville, VA.

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)

Sandhya Mudumbi, MD, University of Alabama at Birmingham, Birmingham, AL. Macy Stockdill, RN, University of Alabama at Birmingham, Birmingham, AL. Nicholas Hoppmann, MD, University of Alabama at Birmingham, Birmingham, AL. James Dionne-Odom, PhD RN ACHPN, University of Alabama at Birmingham, Birmingham, AL. Brendan McGuire, MD,

University of Alabama at Birmingham, Birmingham, AL. Cynthia Brown, MD MSPH, University of Alabama at Birmingham, Birmingham, AL. Marie Bakitas, DNSc NP-C FAAN, University of Alabama at Birmingham School of Nursing, Birmingham, AL.

Objectives

1. Identify the specific impact ESLD has on patients and their family caregivers from their perspectives.
2. Identify the stated needs of patients and family caregivers in ESLD care from their perspectives.
3. Identify the barriers to integrating PC into care of patients with ESLD from patient and caregiver perspectives.

Original Research Background. Palliative Care (PC) is underutilized in persons with end-stage liver disease (ESLD) and little data exists on patient and family caregivers' perspectives on PC needs and how PC can be integrated into ESLD care.

Research Objectives. Identify ESLD patient and family caregiver perspectives on challenges of living with ESLD, potential PC needs, and barriers to integrating PC.

Methods. Semi-structured one-on-one interviews were conducted with purposively-sampled patients with ESLD and their caregivers at a tertiary care academic medical center. Patients and caregivers were asked about: 1) challenges of living with ESLD, 2) their unmet needs, and 3) their understanding and perceptions of PC and hospice, including accessing these services. Interviews were digitally recorded and transcribed. Transcripts were entered into NVivo software and analyzed using thematic analysis.

Results. Patients (n=7) had a mean age of 67 and were mostly female and white (70%) with ESLD due to alcohol (43%), hepatitis C (57%), non-alcoholic steatohepatitis (29%), and with concurrent hepatocellular carcinoma (43%). Most caregivers were female and white (83%), and were the patient's spouse/partner (83%). Patients and caregivers perceived that ESLD challenges occurred in all four quality of life (QOL) domains (physical, emotional, social, and spiritual). Participants' needs included better communication with providers, emotional support, caregiver support, and practical needs. A majority of patients and caregivers had a lack of understanding of PC.

Conclusion. Thematic analysis identified a variety of unmet patient and family caregiver needs in ESLD that could be addressed by PC services. However, a major barrier is a lack of understanding of PC services.

Implications for Research, Policy, or Practice. These results provide a first step in intervention development for a PC intervention to address identified patient/caregiver needs in ESLD with a focus on enhancing PC literacy.

Perceptions of Inappropriate Critical Care Are Decreasing (S856)

Thanh Neville, MD, University of California, Los Angeles, Los Angeles, CA. Joshua Wiley, PhD, Monash University, Clayton Campus Victoria, Australia. Miramar Kardouh, BSc, University of California, Los Angeles, Los Angeles, CA. Myrtle Yamamoto, RN, University of California, Los Angeles, Los Angeles, CA. J. Randall Curtis, MD MPH, University of Washington, Seattle, WA. Neil Wenger, MD, University of California, Los Angeles, Los Angeles, CA.

Objectives

1. Explain what "inappropriate critical care" mean.
2. Recognize that there has been a decrease in inappropriate critical care at one institution.

Original Research Background. When a patient's chance of survival is very low or the quality of life is markedly diminished, intensive care interventions that prolong life without achieving the goals of medicine are often considered "inappropriate" by health care providers. In 2012, we showed that the prevalence of inappropriate treatment was 11% at one academic health system.

Research Objectives. To assess whether the proportion of patients receiving inappropriate critical care has changed from 2012 to 2017, we repeated the evaluation in the same health system.

Methods. On a daily basis from August 28 through December 28, 2017, we surveyed critical care attending physicians in five intensive care units (ICUs) in one health system to ask whether each patient was receiving inappropriate critical care and if so, why the care was inappropriate. In-hospital and 6-month mortality was collected. Receipt of inappropriate critical care, patient characteristics and outcomes were compared between 2017 and 2012.

Results. Over 4 months, 55 physicians made 10,105 assessments on 1424 critically ill patients. Of these, 94 (6.6%) patients received perceived inappropriate critical care, which was less than 11% ($p<0.01$) in 2012. Comparing 2017 and 2012, patient age (mean 61.8 vs 60.6), MS-DRG (4.5 vs 4.5), length of stay (15 vs 14.9 days), and overall mortality (18% vs 20%) were not significantly different ($p>0.05$). The most common reason why treatment was inappropriate in 2012 was burdens grossly outweigh benefits (67% of patients) whereas in 2017 it was that treatment cannot achieve patient's goals (70%). In 2017, inpatient mortality was 9%, 44%, and 73% for patients receiving critical care that was perceived to be appropriate, probably inappropriate and inappropriate.

Conclusion. Over five years at one health system the proportion of patients receiving perceived inappropriate critical care dropped by 40%.