What is sarcopenia and how is it defined?

- Definition of sarcopenia: a low level of muscle, characterized by statistically significant increase in health risk (mortality, toxicity, physical disability). Cut points of these values are defined in the literature.
- Published data detail muscle loss and sarcopenia in patients with cancer, however there are none describing patients in palliative care settings.
- We hypothesized that hospitalized palliative cancer patients would be significantly depleted in muscle compared to early stage disease.

**METHODS**

Retrospective CT image and chart review, of hospitalized cancer patients receiving palliative care

- Retrospective cohort study
- Included patients:
  - Edmonton Zone Palliative Care Program
  - Random sample of patients from the Tertiary Palliative Care Unit from July 2006 - March 2016
  - Patients referred to the Palliative Care Consult Service at the University of Alberta Hospital from January 2008 - October 2009
- Excluded patients:
  - Non-cancer diagnoses
- Comparative group:
  - 785 ambulatory outpatients with cancer of early stage (I-II) n= 441. B: Advanced staged cancer seen by a Palliative Care Service n=197. Independent of age muscle mass was lower -19.1% in palliative patients compared to early stage disease.

**RESULTS**

Distribution or muscle area (cm²) in men. A: Early stage cancer (I-II) n= 441. B: Advanced staged cancer seen by a Palliative Care Service n=197. Independent of age muscle mass was lower -19.1% in palliative patients compared to early stage disease.

**DISCUSSION**

Significance of findings

- First description of body composition in a palliative care setting using radiological criteria.
- There is a striking degree of variability in muscularity and adiposity in our patient population.
- 85.3% male and 75.5% females met sarcopenic criteria which is significantly higher than any previous published studies (mean of 40%).
- The comparison to patients of early stage cancer highlights the progressive deterioration of muscle mass over the disease course.
- Patients with sarcopenia were not necessarily thin, many patients with sarcopenia were simultaneously obese (i.e. with an absolute fat mass of >20 kg and up to 46 kg), making "sarcopenic obesity" (SO) which was seen in 29% of patients the most prevalent phenotype. This is higher than any previous study (mean of 9%).
- The mantle of adipose tissue obscures the functionally and physiologically important deficits in muscle mass.
- The most affected tumor sites were prostate (44%) and urinary tract (45%) which could be due to anti-androgen therapy.
- Studies in other populations consistently show SO to be associated with morbidity and mortality.

Implications in a palliative care setting

- Patients may be deemed erroneously "well" and have not been assessed from a cachexia standpoint or initiated in any interventions for sarcopenia.
- This may lead to a higher symptom burden, decreased quality of life, mobility problems, altered responses to therapy and in turn placement issues on discharge.
- This information can modify patient assessments, communication regarding prognosis, and expectations about rehabilitation goals.
- This new knowledge could significantly change the way Palliative Care Physicians view their patients.

Strengths

- No published studies analyzing body composition in a palliative care setting.
- Large patient population with a wide variety cancer types.
- Utilization of a comparative group allowed assessment of muscle loss throughout disease trajectory.

Limitations

- Study conducted in a single urban inpatient setting.
- No consensus diagnostic criteria for sarcopenic obesity.
- We did not assess symptomatology or nutritional interventions.

Future Directions

- Determining prognostic significance of sarcopenia and sarcopenic obesity in a palliative care setting.
- Qualitative assessment of symptom burden comparing different phenotypes.
- Utilization of CT body composition analysis in clinical practice to guide and improve management/interventions in palliative patients.

REFERENCES