• This is a CME accredited activity.

• The presenters and there are no conflicts of interest.
Pain in Pancreatic Cancer

- More than 50% of patients with pancreatic cancer suffer from abdominal and back pain.
- Third most common symptom when tumor is in head of pancreas and second most common symptom when tumor is in the body or tail.
- Pancreatic cancer involves visceral, somatic and neuropathic components, the main therapeutic approach is a multimodal analgesia.
Pancreatic Cancer Pain Management

Figure

Complete curative resection
Chemical neurolysis or splanchnicectomy
Acupuncture, hypnosis, support, counseling, relaxation
Laxatives, antiemetics
Radio/chimiotherapy
CNB or CPN
Splanchnicectomy
Thoracic epidural
Morphine/analogs +/- combination of different routes
Interventional procedures
Non-opioid (NSAID++)
Antiepileptics
Medical therapies?
Surgery
No surgery
First line
Second line therapy
Third line therapy

Medical Approach

- Opioids (most cancer related pain is controlled by pharmacological oral treatments)
  - *Morphine (step 3 opioid)*- is the first line medical therapy for pancreatic cancer.
  - *Randomized controlled study showed similar analgesia provided with oral morphine and oxycodone for pancreatic cancer* (Mercadante S et al 2010)
  - *Transdermal fentanyl patches can be used for patients whose opioid requirements are stable.*
Medical Approach

- Multidimensional pain mechanisms
- Gabapentin and pregabalin
  - *effectiveness demonstrated in cancer-related neuropathic pain.*
- Corticosteroids
  - *adjuvant for visceral pain*
Chemotherapy and radiation therapy

- **Chemotherapy**
  - *Gemcitabine and FOLFIRINOX showed better quality of life and pain control in management of metastatic pancreatic cancer.*

- **Radiotherapy**
  - *particularly effective in controlling and relieving pain caused by large tumors compressing other organs or structures*
Adverse Effects of opioids

- Drowsiness
- Delirium
- Dry mouth
- Anorexia
- Constipation
- Nausea/vomiting
How can we enhance pain control yet decrease risk of drug induced adverse effects?
Advanced Endoscopy Approach: Pancreatic Ductal Stenting

- Occlusion of pancreatic duct blocks flow of digestive enzymes—leading to increased interstitial and intraductal pressures
- Duct stenting involves deep cannulation of the major PD and insertion of guidewire across the stricture. Dilation is then performed with either a catheter or a balloon followed by stent insertion.
- The most recent case series performed PD stenting in 20 patients with typical obstructive pain and documented decreases in the (VAS) pain score compared to pre treatment
- Four other case series have reported total pain resolution between 41 and 87% of patients.
- Risks include pancreatitis, cholangitis, ductal rupture, stent migration
Advanced Endoscopy Approach: Celiac Plexus Neurolysis (CPN)

- The celiac plexus plays a vital role in the transmission of the pain sensation originating from most of the abdominal viscera.
- CPN- prolonged interruption of the plexus by injection of alcohol.
- EUS permits direct access to the celiac plexus
  - Avoids paraplegia and pneumothorax risk (1-2% percutaneous approach)
- Meta-analysis have reported CPN effectiveness in controlling pain in 70-90% of patients.
- Randomized controlled trial compared pain control in pancreatic cancer patients with early administration of EUS-CPN at diagnosis versus conventional drug therapy- evidence of superiority of CPN in pain relief and some evidence of lower use of morphine.
- Self limited complications such as transient diarrhea (10-30%) and orthostatic hypotension due to splanchnic blood pooling (10-60%).
Advanced Endoscopy Approach: EUS Celiac Plexus Block
Considerations for treatment

- Corticoids – gastric bleeding
- Opioids- patients with long-term constipation or ileus
- Pancreatic cancer patients higher risk of thrombosis
Nutritional Considerations in Pancreas Cancer

- Disease and treatment cause significant nutritional impairment that impacts quality of life with more than 80% reporting weight loss at time of diagnosis and 1/3 of patients having lost greater than 10% of their bodyweight before diagnosis.
- Endocrine and Exocrine function of the pancreas are often affected.
- Common symptoms include anorexia, hyperglycemia, steatorrhea, weight loss, cachexia and malabsorption.
- Chemotherapy can further these symptoms with increased diarrhea, nausea and vomiting.
- Resection can amplify the endocrine and exocrine deficits.
Implications

- Cachexia and malnutrition lead to skeletal muscles wasting and fat degradation, longer hospital stays, increased risk of complications, reduced response to treatment, shorter survival time, reduced quality of life, and increased morbidity and mortality.
Enteral Nutrition (EN) vs Parenteral Nutrition (PN)

- Oral nutrition is preferred
- TPN (total parental nutrition) is associated with more complications, weight loss, constipation, further inability to tolerate oral nutrition
- Supplementation with protein and energy dense nutrition supplements + fatty acids improves outcomes and does not inhibit meal intake
Other Supplementation

- **Fish Oil**
  - Supplemented with EN or TPN as eicosapentaenoic acid (EPA) ranged 2.2g/day to 6g/day
  - Increase weight gain and reported quality of life

- **L-carnitine**
  - Decreased weight loss, increased BMI and improved quality of life compared to placebo
Medical management

- Antiemetics
- Anti diarrheal agents
- Appetite stimulants
- Pancreatic enzyme supplementation
Advanced Endoscopy Approach:

- Duodenal stenting for obstruction caused by tumor
References

References