Palliation / Pain Management

While a number of image-guided interventions are now being used with curative intent, palliation and pain management remain an important part of cancer care for all oncology professionals. Interventional radiologists have much to offer patients, and various aspects of symptom management were discussed throughout the congress, as well as at a dedicated Clinical Focus and Video Learning Sessions.

Opening the session on symptomatic cancer treatment, Dr. Liz Kenny (Brisbane/AU) discussed the **evidence-base of radiation therapy for pain**, one of the most feared aspects of a cancer diagnosis. The most common scenarios where radiotherapy is considered for pain relief are bone pain, local infiltration by cancer, local compression of structures, nerve root pressure or liver metastatic pain. In treating liver metastases, 20-30 Gy improves pain in 75-90% of patients, and affords complete relief in 50%.

Bone pain is the most common scenario for patients being referred for RT, which is one of the most effective and widely used strategies. Such pain can be cancer-related (mass effect on adjacent structures; inflammatory cytokines), but structural integrity can also be compromised, meaning a combined approach is needed. A 2011 Cochrane review of RT for bone metastates determined that while single and multiple fraction achieve similar pain palliation (60% improvement; complete relief 32-34%), but that single treatments were associated with a much higher retreatment and almost double the fracture rate.

More experimental RT treatments are also being pursued. Single large ablative doses have been employed for spinal metastases. Weak evidence for radionuclides shows only small benefit, and that severe adverse events are common. Targeted agents such as 131I, 177Lu and Denosumab (although not an RT drug) are useful.

Dr. Kenny stressed that knowing your limitations is critically important. RT is highly effective at relieving tumour-related pain (as well as being safe and inexpensive), but does not work for all patients and does not immediately relieve structural pain. RT should always be strongly considered for cancer pain, in a multidisciplinary setting, as part of the full armamentarium for bone metastases.




The use of **nerve blocks** was presented by Dr. Georgia Tsoumakidou (Strasbourg/FR). Current guidelines prioritise the use of opioid therapy for pain management, but despite the use of these, many cancer patients still suffer pain, and these patients may benefit from IR procedures. These can be divided into two categories: direct action (thermal ablation, embolisation, cementoplasty) and indirect action (nerve blocking).

Nerve blocks can be performed using thermal (cryoablation or RFA) or chemical neurolysis. Chemical blocks can be temporary (local anaesthetic; often used as a "trial run") or permanent (ethanol or phenol), resulting in the intentional destruction of a nerve to interrupt pain impulse transmission. They are generally performed in the sympathetic chain (coeliac plexus, splanchnic nerve most common) for visceral pain that is resistant to other therapies, or more rarely in spinal nerves.

Alcohol (50-96% solutions) is the most widely used agent, and is effective for up to four months. Injection causes pain, and local anaesthetic should always be used concomitantly. Phenol (concentration 7-12%) produces a shorter-lasting, less intense blockage than alcohol, with slower diffusion. Other agents include glycerol and hyper-/hypotonic solutions.

While nerve blocks can be effective, they are not without risks and side-effects, and careful consideration of the patient's needs and prognosis is required before proceeding. Direct action should be favoured, with nerve-blocking used as a last resort for severe pain management.

Dr. Pierre Bize (Lausanne/CH) addressed the **percutaneous treatment of pleural effusion**. There are five types of fluid that can be present in the pleural cavity (serous, blood, pus, urine, chyle), and a distinction is usually made between transudate (when hydrostatic pressure increases) and exudate (inflammation-increased vascular permeability), most commonly caused by malignancy.

Asymptomatic presentation requires observation, but for symptomatic pleural effusion, thoracocentesis can be performed either diagnostically or to relieve the patient. It is a straightforward procedure that can be performed under US, providing information in >90% of cases. However, case must be taken to stay above the ribs to avoid vessel damage.

Chest tube drainage dates back to the time of Hippocrates. It is performed under US or CT guidance, using local anaesthetic and the Trocart/Seldinger technique, with the free end of the tube attached to an underwater seal or drainage sac with a fluttering value, to prevent air from entering the pleural cavity. Progressive drainage avoids re-expansion pulmonary oedema, and the tube should be flushed twice a day to prevent clogging.

Pleurodeisis is used to prevent recurrence of pneumothorax or pleural effusion. It can be performed chemically (bleomycin, povidone iodine, talc) or surgically, and requires sufficient pain relief. The chest tube can be removed when drainage <100 ml/day.

Indwelling drainage catheters (e.g. PleurX) allow home-drainage by the patient themselves. It is useful where pleurodeisis fails, or for recurrent pleural effusion. It is important that the patient can care for the catheter themselves, and that no more than 1.5l is drained at a time.

Percutaneous treatment of malignant ascites was discussed by Dr. Phil Boardman (Oxford/UK). Only 7-10% of ascites are malignancy-related. The majority of cases are synonymous with development of peritoneal carconomatosis (half of all patients), but a significant minority of patients will have other causes. Most arise from ovarian or unknown primary tumours. Symptoms include abdominal distention and pain, shortness of breath and early satiety.

US-guided intermittent paracentesis is widely but heterogeneously used, providing >90% symptomatic relief. The outpatient setting is safe, feasible and cost-effective; however, only 12.8% of patients stayed in hospital <12 hours (RCOG findings). Although effective, it is inconvenient and costly in patients with recurrent ascites, for whom longer-term solutions are needed.

Long-term paracentesis is performed via tunneled indwelling silicone catheters with an external one-way valve. Devices are vacuum-assisted or employ free drainage. They offer repeated flexible drainage in the community, lower costs, and better symptom control due to more frequent, smaller drainage. As these patients are generally nearing the end of life, Dr. Boardman generally leaves the follow-up to the community care team, to minimise hospital attendance. Most problems, he noted, as generally due to logistics and communication, rather than the catheters themselves.

The "How I do it: pain management" Video Learning Session

Periteno-venous shunts are best suited to active individuals with good performance and cardiovascular status. Passive flow is position-dependent (supine optimal) and occurs at a gradient of >3 cm H2O. Literature focuses on technical feasibility with little outcome data. The choice between indwelling catheter and PVS is largely a matter of local and patient preference.

*Presentations are available at **www.esir.org***