30 years in Birmingham

used for neoadjuvant therapy (downsizing surgically untreatable tumours into treatable ones) or for adjuvant therapy (after surgical excision of the primary where there is a high risk of metastatic disease). Since 1991, new protocols and new drugs have been developed, and are still being developed.

OTHER THERAPIES

Cancer is a disease of the genome. We are starting to understand the molecular basis of cancer, revolutionized in the last 20 years by technology that has allowed us to elucidate the genome in health and disease. By understanding what has gone wrong we can design novel therapies to target the disease, whilst sparing normal cells. This includes drugs such as receptor tyrosine kinase inhibitors and immunotherapies.

KEY LEARNING OBJECTIVES

- Learn how the three main modalities for treating cancer are used appropriately
- Understand how to use the newer treatment options — immunotherapy, receptor tyrosine kinase inhibitors
- Discover what is likely to improve in cancer treatment in the future

MULTIPLE CHOICE QUESTIONS

1. What are tyrosine kinase inhibitors licensed for use in Europe for?
 - (A) Canine mast cell tumours
 - (B) Feline mast cell tumours
 - (C) An anti-angiogenic therapy for thyroid carcinoma in the dog
 - (D) All of the above
2. Where is surgery used as a modality potentially to cure tumours?
 - (A) Tumours with a low risk of spread
 - (B) Where adequate margins can be achieved
 - (C) Where staging has been undertaken and showed no sign of metastatic disease
 - (D) All of the above together
3. Why is CT particularly important for staging feline injection site sarcomas (FISS)?
 - (A) The size of tumours determined by CT can be up to twice the size estimated at physical examination
 - (B) CT can differentiate between an inflammatory reaction and FISS
 - (C) CT radiation will help sterilize the tumour bed
 - (D) All of the above

Analgesia: what has changed in the last 30 years?

Jo Murrell

A survey was carried out in the UK in 1996 into the attitudes of British veterinary surgeons towards perioperative analgesia in dogs, cats and small mammals. Dogs were administered analgesics for ovariohysterectomy 53% of the time and cats only 26% of the time, illustrating the low use of analgesics for routine surgery 23 years ago. This would have led to untreated pain in a huge number of animals in veterinary practice and it is likely that the situation was even worse 30 years ago. Fortunately more recent surveys have shown a massive increase in the use of analgesics for routine surgery by UK veterinary surgeons. In 2013, analgesia provision for routine surgery (neutering and lump removals) was almost ubiquitous in both cats and dogs. This probably reflects increased knowledge about the effects of pain in animals, changes in veterinary education and increased availability of analgesic drugs.

Central sensitization was first noted in an experimental rat model by Clifford Woolf in 1983 and this led to the

principles of pre-emptive analgesia and multimodal analgesia in pain treatment. The veterinary profession was not far behind in detecting central sensitization associated with acute and chronic pain in animals following landmark studies led by Waterman-Pearson and colleagues. This has led to the widespread adoption of pre-emptive analgesia and multimodal analgesia in veterinary patients, improving our ability to provide robust analgesia for pain.

It is easy to forget that 30 years ago we were reliant on unidimensional methods to score pain in animals such as the simple descriptor scale, numeric (pain intensity) rating scale or visual analogue scale. These were unvalidated and insensitive to pain. Recently the team at Glasgow University have developed and validated composite pain scales to quantify acute pain in cats and dogs. Being able to measure acute pain is a huge leap forward in our ability to treat acute pain effectively. Using pain scoring tools also heightens awareness of pain within the veterinary team. Furthermore there are now clinical metrology instruments validated for the quantification of pain associated with osteoarthritis in dogs and cats, and tools are being developed and validated to measure quality of life in these species.

Last, but not least, we now have many more licensed analgesic drugs available to treat pain in cats and dogs and, with licensing, come data about optimal dosing and efficacy to support optimal use in practice.

Delivered by BSAVA to:

Guest (guest)

IP: 35.173.219.149

KEY LEARNING OBJECTIVES

- Know how analgesia provision has changed over the last 30 years
- Know the research that has led to changes in analgesia practice
- Know how pain assessment tools have developed over the last 30 years

MULTIPLE CHOICE QUESTIONS

1. What is an example of multimodal analgesia?
 - (A) The administration of a non-steroidal anti-inflammatory drug (NSAID) combined with intravenous methadone
 - (B) The administration of a fentanyl continuous rate infusion combined with intravenous methadone
 - (C) The administration of an NSAID combined with paracetamol

- (D) The administration of epidural morphine combined with intravenous methadone
2. What is central sensitization?
 - (A) It is an upregulation of pain pathways in the periphery
 - (B) It is when stimuli that are normally innocuous start to elicit pain
 - (C) It is an upregulation of the pain pathways in the spinal cord
 - (D) It is an upregulation of pain pathways in the brain and spinal cord
3. Why is the use of a pre-emptive analgesic technique important?
 - (A) It blocks the pain pathway at multiple receptors
 - (B) It prevents the upregulation of the pain pathways
 - (C) It blocks the onset of hyperalgesia
 - (D) It blocks the onset of allodynia

Antibiotic use: the past, the present, the future

Fergus Allerton

PENICILLIN AND ANTIMICROBIAL RESISTANCE

Having discovered penicillin in 1928, Alexander Fleming cautioned against its careless use during his Nobel lecture in 1945. However, in the 1940s and 1950s it seemed that discovery of new classes of antibiotic could keep pace with the development of resistant pathogens and few restrictions were applied to their use. This picture changed as the pipeline of new drugs dried up. The threat of AMR is now recognized as one of the great perils to mankind. Within a generation it is predicted that globally, 10 million people could die per year due to drug-resistant infections.

Antibiotic use imposes a powerful selection pressure on bacteria and is one of the principal drivers of resistance. Eliminating unnecessary use of antibiotics will help to maintain their efficacy. Antibacterial stewardship encourages the rational use of antibiotics. When effectively embraced by prescribers, antibiotic stewardship initiatives can help decrease antibiotic usage and reduce the prevalence of multiresistant infections.

PROTECT ME AND THE NON-PRESCRIPTION PAD

The PROTECT ME guidelines produced by the Small Animal Medicine Society and BSAVA provide recommendations for appropriate antibiotic selection for many common presentations. Situations where antibiotics may not be immediately warranted are also highlighted. Currently 50–70% of cases of acute diarrhoea, 40% of

cases with acute respiratory signs and 20% of cases with acute vomiting receive antibiotics in the UK. It is unlikely that antibacterial therapy is necessary in each of these cases.

Veterinary surgeons (veterinarians) often cite client pressure as the reason for antibiotic prescription while, conversely, owners will attribute the decision directly to the veterinary surgeon. Measures are necessary to address this discord and ensure that inappropriate antibiotic prescription is avoided. A non-prescription form explains that, after thorough physical examination, antibiotics are not required while providing alternative management options and appropriate safety-netting advice. In people, this approach has contributed to a reduction in antibiotic usage without affecting patient outcome.

AN ETERNAL STRUGGLE

Pharmaceutical companies need to be incentivized to bring novel antibiotics to the market. This will necessitate new funding strategies, as, once available, any new drug will be reserved for the most severe cases, restricting its use to a minimum. As guidelines can be ignored, several European countries have prohibited the use of highest priority critically important antibiotics (including the fluoroquinolones and third-generation cephalosporins) without a supportive culture and sensitivity result. If we wish to maintain prescriber autonomy in the UK, it will be vital to demonstrate that we can use antibiotics wisely.

Education is a key feature of antibiotic stewardship; sharing the message with all the relevant stakeholders will improve pet and human healthcare. TARGET (a scheme run by Public Health England) has developed means to raise awareness among children (including a version of Top Trumps based on microbial virulence and badges for Scouts and Brownies). Veterinary surgeons need not be left behind.