

Practical guidelines for successful veterinary oncology

Dr Anthony Zambelli

Inanda Veterinary Hospital & Specialist Referrals

www.inandavets.com

info@inandavets.com

What is oncology?

The diagnosis and staging of cancer

The treatment of cancer

The treatment of other health issues

What is staging?

Knowing the full extent of the Tumour (T)

Detecting spread to regional lymph nodes (N)

Finding any evidence of metastasis (M)

Understanding the patient's overall health status

Why stage every cancer patient?

We cannot possibly "see" or know everything

Good vets practice according to evidence

Staging is a diagnostic process

- Individualised to each patient
- Individualised to each tumour

How do we collect evidence?

MINIMUM DATABASE

Blood smear

Haematology

Clinical chemistry – ALP, ALT, Urea, Creatinine, Albumin, Globulin, Glucose and Ca²⁺

Urine and faecal analysis

Imaging studies

Tissue diagnosis

What is the value of the MDB?

- Blood smear detects inflammation, leukaemia, bone marrow involvement
- UA – renal insufficiency, proteinuria, infection
- FA – concurrent parasites eg *Giardia*, *Ascaris*
- Clinical Chemistry – organ dysfunction may affect treatment choices
- Imaging – metastasis can affect choices

How staging affects treatment

(lecture)

What diagnostic tools do we have?

- A good history and clinical exam is 70% of the requirement
- Vaccination and deworming status
- Vomiting; diarrhoea; coughing; weight change; swellings; skin complaints; PUPD
- Ask about changes and general health not just the lump

Tools

- Every practice has a microscope
- Blood smears, UA, FA, FNA
- Every practice can do a haematocrit and TP
- Refractometer, centrifuge
- Every practice should have an X-ray machine
- Every vet can take a biopsy
- Every practice has access to specialist advice, expertise and equipment

Thus every patient with cancer can benefit from your care

What is adjuvant therapy?

Improves primary therapy

Eg chemotherapy to aid radiation efficacy

Additional drugs or treatments (examples)

Control arthritic pain in older cancer patient

Preventing nausea in chemo patients

Analgesia for cancer pain

Treating anaemia with transfusions

Nutritional therapy

More information on adjuvant therapy later...

Treatment options?

1. No treatment
2. Euthanasia now or later
3. Palliative care
4. Palliative treatment
5. Curative-intent treatment

1. Why deny treatment?

Choose your battles well

Make this decision based on evidence

Understanding client needs and means

Act as the animal's advocate

You are looking out for its interests first, not yours or the owner's

May be other needs eg arthritis, nausea

2. Euthanasia

A treatment for intractable pain or suffering

Can be now or later

A treatment *option*

Timing is important

Let the client choose the time and manner of passing, *not the disease*

3. What is palliative care?

Care of symptoms of cancer or other disease *without* CORE anti-neoplastic measures

- Analgesia
- Dental disease
- Infection
- Anaemia
- Depression / lethargy
- Analgesia

Many cancer patients are older

- Arthritis, dental pain
- Control obesity
- Dental prophylaxis
- Canosan or Metacam for arthritis
- Physiotherapy for muscle tone

Pain ladder concept

Lowest pain level control, added in cumulative "layers"

Consult a veterinary anaesthetist for advice

4. Palliative treatment

Oncotherapy to decrease tumour bulk

Induce remission

Temporary although possibly long duration (years)

Different grades
Eg lymphosarcoma, chronic lymphocytic leukaemia, osteosarcoma
Proper staging a must
Proper patient selection
Good client education & involvement
A clear understanding of goals and outcomes
In some instances, a salvage or rescue plan

Why is proper staging necessary in palliative treatment?

Treatment may exacerbate or create other problems
Doxorubicin and cardiac disease
There may be other health problems to address in order to improve QOL
Eg arthritis, obesity, atopic skin disease
Staging holistically encompasses these comorbidities

Holistic palliative treatment maxim:

You can't manage what you can't see
If you do what you've always done, you get what you've always got before
A patient is more than a medical problem to be solved
Social – Medical – Psychological aspects
Quality of life is paramount, not life at any cost (*versus* human oncology)

5. Curative intent oncotherapy

Proper staging and good knowledge identify possibilities for cure
Surgical cure or control + adjuvant therapy
Radiotherapy, chemoradiation or adjuvant RT
Chemotherapy alone

Why is adjuvant therapy necessary?

Adjuvant = ancillary treatment delivered alongside primary therapy
Either before (Neoadjuvant) or with/after primary treatment
Improved survival rates and times
Lower complication rates
Improved quality of life (QOL)
Better compliance and satisfaction

Timing adjuvant therapy

Essential for better outcomes
Eg most radiosensitive sarcomas require *presurgical RT*
Mast cell tumours require post-induction *RT*
Osteosarcoma patients receive adjuvant (post-surgical) chemotherapy
Timing determined by potential side effects and efficacy

Assessing Patient Needs and improving QOL

Practical ways veterinary care can approach human care standards

How to assess patient needs

1. TNM staging of tumour
2. Karnofsky Performance Score (KPS)
3. TWIST (Time without symptoms or toxicity)
4. Visual pain scoring (VPS)
5. Home diaries
6. The Palliative Care Model (PCM)

1. TNM

Tumour

What tumour and what do we know about it?

Node

Are nodes involved and so they contribute to QOL?

Eg pain from lymphoedema or lymphadenitis

Metastases

Dyspnoea, anaemia, GI obstruction etc

Paraneoplastic syndromes eg GI ulcers

2. Karnofsky Performance Score (KPS)

Score from 10 - 100

Record at each revisit

Track graphically

Act on trends

KPS	General / Specific	Vet Notes
100	Normal activity, no special care NO evidence of disease	Ideal
90	Normal activity Minor signs of disease	Just optimise care non-invasively
80	Normal activity with effort Signs of disease present	Intensify treatment Treat lethargy or comorbidities
70	Decreased activity but continent and eating; some assistance needed	Check for comorbidities or treatment-associated side effects
60	As above, but may require occasional help eg climbing out car, enticing food	As above but consider diet, arthritis, strengthening through physiotherapy etc
50	As above but needs frequent assistance	Appetite stimulants, anabolic steroids, rehabilitation therapist intervention needed, plus above

40	Unable to care for self, needs hospital care, disease progressive; disabled	Admit, get rehabilitationist (nurse, physio) involved, tend to wounds, urination and defaecation, ensure adequate cancer nutrition, consider alternate oncotherapy
30	Severe disabled, but death not imminent	Consider euthanasia or intensive supportive care eg transfusion, epidurals
20	Very sick, active supportive treatment necessary	Consider euthanasia, emergency oncotherapy and aggressive supportive Rx
10	Moribund	Euthanasia obligatory

3. TWIST

Time without symptoms or toxicity

Another way of measuring quality of oncotherapy

Measured in days or days/month

- >21 days/month TWIST ideal for most chemo
- >25 d/m TWIST for radiotherapy
- >21 – 26 d/m TWIST post-operative

4. Visual Pain Scoring

Several schemes – choose one and stick to it

Which cancers cause pain?

Bone cancers

Pleural or peritoneal eg mesothelioma

Jaw or deforming nasal tumours

Some soft tissue sarcomas

Mast cell tumours – regional inflammation and GI ulceration

Colonic/rectal tumours

5. Home care diaries

Extremely useful tool although I don't use them as often these days

Client feels involved and no longer powerless

Home nursing reduces costs

Relieves vet's burden of care

Anticipates and manages problems early

Simple

Example of home care diary

Essential components for home care

Client communication and education

Digital thermometer

5 day supply of oral antibiotics – these days I use prophylactic antibiotics

6 – 12 days of q8h metoclopramide tabs or Cerenia

Establish a grading system with clients

3+ = normal habitus, 4+ over-active, 2+ depressed, etc

Establish actions if pyrexia / depressed

6. The Palliative Care Model

1. Symptom History

2. Multiple, simultaneous symptoms
3. General principles of palliative care
4. Assess and reassess the symptom
5. Discern the cause of the symptom
6. Use scheduled doses rather than prn
7. Use adjuncts to analgesics
8. Anticipate treating multiple symptoms
9. Treat depression and anxiety
10. Anticipate side effects of pain for other palliative therapies
11. Consult allied health professionals to develop a palliative care plan
12. Develop a palliative care PLAN

Putting it all together into a treatment plan

Choosing your approach

Local disease – local treatment

Regional or widespread disease – systemic +/- local therapy

Have a histologic diagnosis

HAVE A PLAN BEFORE YOU BEGIN!

What is your goal?

Improve QOL

Cure when you can...

Palliative effectively when you can't cure

Euthanase only when you must

Offer treatment options, let the client choose

Offer options on the basis of evidence, not assumptions or guesses

The problem with aged & frail patients

Most cancer patients are >7 yo

Age is *not* a valid reason to deny treatment!

Clients more attached to pets they've had for many years

Age is not a disease requiring treatment

Adding 1 year to lifespan of a 14-year-old is more valuable than to a 4 year old

Old ≠ Frail!

A proposed definition of frailty is "a state of **age-related physiologic vulnerability** resulting from **impaired homeostatic reserve** and **reduced capacity** of the organism to withstand stress."

Controlling Nausea and V+

Chemo-associated, prevention:

Prochlorperazine, Ondansetron, Metoclopramide

Chemo-associated, delayed:

Prochlorperazine, ondansetron, Aprepitant
Also – Lorazepam, Dexamethasone
Discontinue other drugs e.g. theophylline, digoxin, KC/
Address medical nausea –
Ileus, gastroenteritis, obstruction, FBs
Vomition is hard to treat, easy to prevent

Controlling Diarrhoea

Activated charcoal tablets
Diet – change from high fat to lower fat, or special fibre diets; can be proactive
Ulsanic high doses
Cholestyramine?
(Scopolamine, loperamide)
NPO 12-24 hours

Fatigue

Decreased capacity to maintain performance
One of the most common symptoms of cancer, paraneoplastic syndromes, chemo
or radiation therapy
Consider aetiology
Different approaches to treatment:

Fatigue

Erythropoietin (Eprex) / transfusion – anaemia
TNF- α - NSAIDs, cortisone
Anorexia-cachexia – Maropitant, Metoclopramide, K⁺/Mg²⁺ supplements, prednisolone, cyproheptadine,
mirtazapine
Neuropathy & muscle loss – physiotherapy
Diabetes mellitus – withdraw cortisone, use insulin
Hypercalcaemia – IV saline, diuretics
Infection, fever – antibiotics, NSAIDs
Haemolytic anaemia – corticosteroids, blood transfusion
Leukopaenia – antibiotics, G-CSF
Depression – antidepressants, attention, psychostimulants
Anxiety - anxiolytics

Infections and chemotherapy

Lengthened periods of neutropaenia = increased opportunistic infections
Neutropaenia = absolute neutrophil count (ANC) $<4 \times 10^9/L$
Bands + matures included
Fever in a neutropaenic patient =
A single reading >39.3 or sustained temperature >39.0 for >1 hour

Infections

Even in the absence of fever, neutropaenic patients should be assumed to be infected if:

T <36°C

HR <80

RR >40

MAP <60-70mmHg

In all cases, these are usually occult bacterial infections

Infections 🙌 IMPORTANT 🙌

Initial evaluation should include blood cultures, skin/mucous membrane lesions, diarrhoeic stools

Chest rads, CBC, ALP, ALT, Urea and Creatinine, urinalysis

Empiric use of antibiotics has been shown to reduce mortality

Amoxycillin/clavulanate +/- gentamicin

Stop after 10d if afebrile after d3; otherwise continue longer and assess frequently

So... treating cancer....

Is not witchcraft – it's science

Must be based on:

Sound scientific principles

A clear understanding of cause and effect

Good communication

Good intentions tempered with wisdom

Total patient care

1. Physical
2. Medical
3. (Intensive Medical Care)
4. Nutrition
5. Nursing
6. Social
7. Psychological

Total Patient Care - Physical

Weight

Body Condition

Feeding

Mobility and pressure sores

Excretion

Wounds, scald and sutures

Total Patient Care - Medical

IV lines

Drips, catheter care, CR-BSI

Urinary Catheters
Drug Dosages
Prophylactic & home medication

Total patient care – intensive medical

The “rule of 20” is a checklist
Aggressive medicosurgical interventions
Rescue therapy
Regional bloods
Intensive monitoring plans
Bloods, BP, ongoing imaging

Total patient care - Nutrition

Even if you don't treat the cancer, cancer patients require different nutrition
Tumours preferentially consume carbohydrate
This starves the animal of glucose → cachexia and fatigue
Tumours use glucose, produce lactate → fatigue, mild acidosis
Animal must consume some of its remaining glucose to metabolise lactate ☞ further starvation

Total patient care - nursing

Bandage care, turning and moving, etc.
Recognising medical needs
Alerting vets to patient needs
Administering treatments

Total patient care - social

Pets with cancer should continue social contact if vaccinated
Contact with humans and normal family environment
Preserve routines
Recent evidence that vaccines still generate response during chemo
Avoid live vaccines

Total patient care - psychological

Commitment
Compassion
Common Sense