Chemotherapy in Veterinary Medicine

No one wants the diagnosis of cancer, it can in many cases feel like a bolt out of the blue and an almost hopeless situation.

Cancer is not 1 single condition but a great number of different diseases, which range from the relatively benign to the terminally malignant. Regardless of the specific cancer there are generally 3 major treatment options we can consider; surgery, radiation and chemotherapy.

Today we are looking at chemotherapy. For many this word conjures up images of hair loss, and sickness, long hospital stays and a longer recovery. This is not the aim of veterinary chemotherapy, and there are several reasons for this.

1) Humans have a life expectancy of decades, compared to our pets who we are hopeful to get into their late teens, this means when a human develops cancer at 40, we are trying to eliminate every cancer cell so they will have the normal additional 40 years of life. Just like in humans, cancer in animals is more common with age. In cats and dogs, if they develop cancer at 12, we are looking to keep the 2-4 years of life expectancy. As such we may not need to eliminate the cancer entirely, merely suppress or control it.

2) Humans know what is going on and can give consent. We can rationalise the short-term payment of a terrible year to have the rest of our lives. We cannot do this with animals and a primary value in veterinary medicine is to ensure a good quality of life.

**How we proceed with chemotherapy.**

To start we need to stage and diagnose the cancer, this usually involves;

- imaging (x-rays and ultrasounds, possibly CT scans)
- biopsies (usually taken surgically)
- bloods and/or urine samples
- in some cases removal or debulking (removing the majority of) the mass/masses.

Once we have the diagnosis we recommend to involve an oncologist,

- this can be done directly by referral to an oncologist (we usually use SASH, small animal specialist hospital), this is particularly valuable for uncommon cancers or ones that require specialist surgeries or imaging
- We can also involve an oncologist remotely, we can send the lab reports, diagnosis, history and other pertinent information to an oncologist service and they give us the data on prognosis, treatment options, chemotherapy protocols and palliative care.

Regardless of which oncology service we use we can do the chemotherapy treatments here at VetHQ Double Bay.

These chemotherapy treatments can range from the relatively hands off tablet medications that are given at home with regular monitoring blood tests, to the more in depth weekly intravenous injections, and their monitoring tests.

**Side Effects**

The aim of chemotherapy in animals is to destroy, suppress or inhibit the tumour, depending on the kind of cancer we have, without effecting the quality of life.

While the chemotherapy protocols are designed with this in mind, this does not mean we won't get any side effects, as such monitoring is very important.

Chemotherapy targets dividing cells – as cancers by their nature grow quickly, their cells are continually dividing. This also explains the side effects of chemotherapy;

- Wound healing – healing wounds have dividing cells to grow new tissue, this is most important after surgery, we often need a delay between surgery and chemotherapy to allow enough wound healing time
- The gut – the lining of the stomach and intestines are continually replenishing, this lining can be easily affected by chemo causing signs from mild diarrhoea and vomiting, to anorexia (not eating) uncontrolled vomiting, bloody diarrhoea, fever and infection (with the gut lining compromised bacteria can enter the body and cause infection)

- Bone marrow – the bone marrow produces red and white blood cells, a lack of red blood cells (anaemia) and/or white blood cells (leukopenia) can make you very sick.

Many chemotherapy agents have their peak effect 3-7 days after they are given so we often target monitoring around this. Monitoring can include follow up blood samples (especially for red and white blood cells), regular temperature monitoring, or urine samples.

Buddy receiving treatment

While rare, some individuals get more significant side effects that require hospitalisation, we often need to treat them with

- Fluid therapy to maintain hydration.
- Antibiotics (sometimes directly into the vein)
- Gastroprotectants (agents to protect and allow healing of the gut)
- Anti-nausea medications
- Liver and/or kidney support where needed
- Feeding tube placement so they can continue to have calorie intake.
- Diet changes – using very high calorie food so they don't need to eat as much when sick.

Cats and dogs that need hospitalisation for chemotherapy may need to have their chemotherapy changed, chemotherapy is not a "static" treatment, it is important that each patient's chemotherapy is tailored to them, with the aims of the best outcomes and the least side effect.

Good health

Dr Tony VetHQ