

Bristol One Health Conference: 24/11/19

This year One Health Bristol held their 4th conference in the pre-clinical Veterinary school, at the University of Bristol.

We had around 50 attendees from the following courses/professions; Human medicine, Veterinary medicine, Pharmacology, Medical humanities, Veterinary epidemiology, and Veterinarians.

Talk One: Miss Emily Milodowski – “Cancer Immunotherapy: From mouse to man... to dog?”

Our first talk discussed the impact of cancer on both animals and their owners, citing that owners who have pets with cancer are more likely to suffer from depression. She then went on to discuss the use of animals in research, their benefits but also their drawbacks. For example, mice rarely get spontaneously developing tumours, so all tumours must be induced, nevertheless the mouse immune system has innate and cellular mechanisms similar to our own.

Miss Milodowski's current research is currently immunotherapy for metastatic melanomas (5th most common tumour in humans, most common oral tumour in dogs). Immune checkpoints allow the body to self-regulate the immune system and can be harnessed to help remove tumours. There are multiple mechanisms at the immune synapse, looking into the different receptors and neoplastic cells are more likely to express more receptors such as TIM3, TIGIT. By identifying these receptors treatment can be targeted.

The talk was summarised by saying animal research leads to human treatments which should then flow into animal medicine.

Cancer is part of the One Health remit as it has physical and mental impacts on pets and owners.

Mr Andy Grist: “One Health – greater than the sum of its parts? Looking at collaborative opportunities within the teaching of medical and veterinary degrees”

This talk was an open discussion of how the veterinary and medical schools at the University of Bristol could collaborate, as students have some overlaps in their courses, face similar problems and could foster relationships as future working professionals. He emphasised that these changes needed to be student led.

His talk also included a summary of common zoonotic parasites, including Toxoplasmosis and Taenia solium.

We also discussed if pig cadavers could be used for teaching ‘the normal’ as well as disease processes, due to their widespread availability.

Dr Maria Paula Escobar – “One Health from the lens of Social Science: View, Implications and invitations”

Dr Escobar began with an overview of the history of One Health, and how it began to develop in the 1800s. She highlighted the fact that over the last 10 years the number of papers published with a One Health focus has quadrupled showing how One Health has captured many scientific minds.

This talk discussed how animals are not a disease risk to us as humans, but we have a ‘shared risk’ due to the proximity of our environments. Veterinary and human medicine should not be separate, and collaboration must be improved, especially in the approached to prevention, education and epidemiological intervention.

Professor Sian Clarke: “Availability and use of antibiotics in Uganda – insights from research with drug shops”

Professor Clarke’s talk discussed the availability of antibiotics in developing, low income countries, where the health services are not sufficient to support their high infectious disease burden. She discussed the differences between prescribing habits of veterinary and human medicines and how access differs. For example chloramphenicol has been banned from use in food producing animals, however farmers can still buy it from human drug stores at a fraction of the price.

Research has also found that farm animal antibiotics are also used to treat people, eg. PenStrep (Combitic) is thought by locals to be a ‘better’ and more faster acting drug despite it being retailed for cows. It was interesting to see the results from focused group discussion with the local Ugandan people rather than quantitative results from other studies. Access to antimicrobials, as well as excessive use should be targets of our efforts to combat antimicrobial resistance.

Dr Tristan Cogan- “What will we do when antibiotics run out?”

Our final talk of the day by Dr Cogan started with condemnation of governments to tackle antibiotic resistance and how we are failing to produce new antibiotics and novel treatments.

BRIC economies rely on antibiotics as growth promoters in livestock, without this prophylactic use they could not feed their growing populations. We as developing countries have created the issue of AMR, we can afford to audit and restrict use, but lower income countries cannot. For example, you need a developed health care system to implement prescriptions.

New antibiotics are expensive to produce (\$2.6 billion) and they are likely to develop resistance within 6-18 months, meaning we need to find alternatives. Current research ideas include: bacterial phages, probiotics and Crispr-CAS, all of which have their own drawbacks.

Pictures below: (top left) Professor Sian Clarke talk, (second row left) Andy Grist discussing the need of medics and vets working together and (second row right) Emily Mildowski explaining the importance of her research for both human and companion animals patients.

