# Veterinary oncology in Europe:

Past

Present

Future

Johan de Vos

European Society of Veterinary Oncology

## History

- History of veterinary medical oncology in Europe
- History of veterinary radiation therapy in Europe
- *History of veterinary surgical oncology in Europe*
  - *US development – Steve Withrow*

# Grandfathers

- **Wim Misdorp** (pathologist; *hon member ESVONC*)
  - mammary tumours 60's -90's
  - 1980 TNM Classification of Tumours in Domestic Animals
- **Andre Parodi** (pathologist; *hon member ESVONC*)
  - hematopoietic tumours
  - 1980 TNM Classification of Tumours in Domestic Animals
  - 2007 WHO Histological Classification of Hematopoietic Tumors of Domestic Animals. Valli VE, Jacobs RM, Parodi AL, Vernau W.
- **Larry Owen** (pathologist; *hon member ESVONC*)
  - 1980 TNM Classification of Tumours in Domestic Animals
- **David Bostock** (*pathologist*)
  - overview articles on different tumour types 70's & 80's

J Small Anim Pract. **1972** Jul;13(7):359-67.
Chemotherapy of canine and feline neoplasia.
**Bostock DE, Owen LN**. Department of Animal Pathology, University of Cambridge

# Literature

*J. small Anim. Pract.* (1972) **13**, 359–367.

## Chemotherapy of canine and feline neoplasia*

D. E. BOSTOCK AND L. N. OWEN

Department of Animal Pathology, University of Cambridge

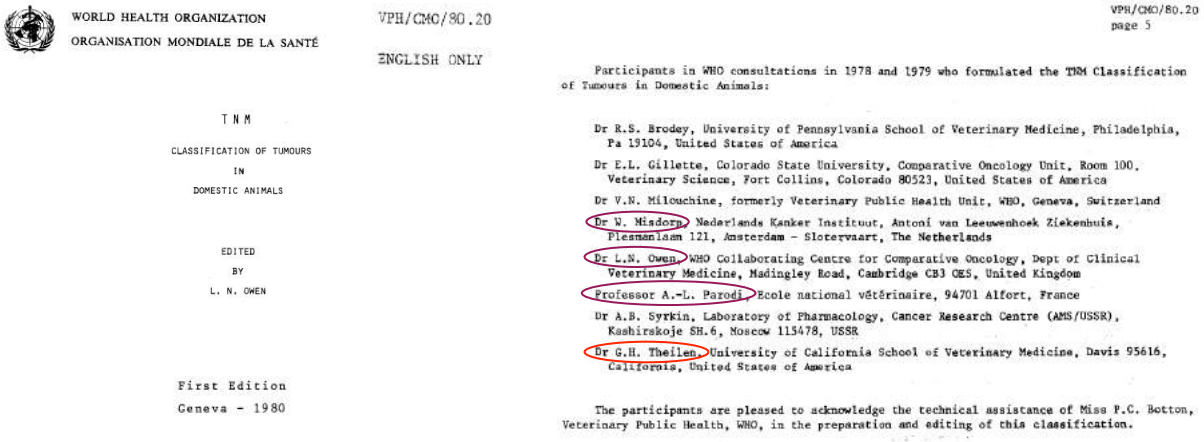
### INTRODUCTION

In spite of the recent advances made in the treatment of human malignancy, especially in the field of lymphosarcoma and leukaemia, the application of chemotherapy to animal neoplasms has progressed slowly. Amongst the most important reasons for this state of affairs are the high cost of treatment, unwillingness on the part of the owner to consider treatment which is probably only palliative, and the frequent development of unpleasant side-effects when these agents are given in therapeutic doses. For these reasons, veterinary surgeons in practice have been unwilling to attempt treatment, and there is no doubt that a tremendous amount of clinical research is necessary before full use can be made of even the compounds which are available at present.

### CONCLUSION

Although there are many potentially useful chemotherapeutic agents available, the value of the majority in the treatment of canine and feline malignancy is far from proven. Advances in their more effective utilization will probably have to come from clinical research in veterinary schools where more time can be spent in their evaluation, but close co-operation between research workers and veterinary surgeons in practice is essential if the work is to progress. Through the tumour survey we have already established an extremely valuable liaison with a number of progressive small animal practices, and it is hoped that in the future this can be extended to the field of therapy, with benefit not only to the animal population but perhaps also to man himself.

# TNM classification of tumours in Domestic Animals



WORLD HEALTH ORGANIZATION
ORGANISATION MONDIALE DE LA SANTÉ

VPH/CMO/80.20

ENGLISH ONLY

T N M

CLASSIFICATION OF TUMOURS
IN
DOMESTIC ANIMALS

EDITED
BY
L. N. OWEN

First Edition
Geneva - 1980

VPH/CMO/80.20
page 5

Participants in WHO consultations in 1978 and 1979 who formulated the TNM Classification of Tumours in Domestic Animals:

Dr R.S. Brodey, University of Pennsylvania School of Veterinary Medicine, Philadelphia, Pa 19104, United States of America

Dr E.L. Gillette, Colorado State University, Comparative Oncology Unit, Room 100, Veterinary Science, Fort Collins, Colorado 80523, United States of America

Dr V.N. Milouchine, formerly Veterinary Public Health Unit, WHO, Geneva, Switzerland

Dr W. Misdorp, Nederlands Kanker Instituut, Antoni van Leeuwenhoek Ziekenhuis, Plesmanlaan 121, Amsterdam - Slotervaart, The Netherlands

Dr L.N. Owen, WHO Collaborating Centre for Comparative Oncology, Dept of Clinical Veterinary Medicine, Madingley Road, Cambridge CB3 0ES, United Kingdom

Professor A.-L. Parodi, Ecole national vétérinaire, 94701 Alfort, France

Dr A.B. Syrkin, Laboratory of Pharmacology, Cancer Research Centre (AMS/USSR), Kashirskoje SH.6, Moscow 115478, USSR

Dr G.H. Theilen, University of California School of Veterinary Medicine, Davis 95616, California, United States of America

The participants are pleased to acknowledge the technical assistance of Miss F.C. Botton, Veterinary Public Health, WHO, in the preparation and editing of this classification.

# History of radiation therapy

- 1895 Roentgen discovers X-rays
- Eberlein (German Physician and Veterinarian)
  - 1896: Diagnostic x-rays
  - 1906: Therapeutic x-rays (first clinical reports of use in animals)
- 1927 Roentgen Institute founded at Vienna Veterinary High School (Austria)
  - 1938 Alois Pommer (first Director) purchases 180 kVp orthovoltage tube
- *1939 M Emmerson (student of Pommer) (Univ. of Pennsylvania Vet School, USA)*
  - *purchases 220 kVp orthovoltage tube*
  - *3Gy every other day to 36-48Gy*
  - *Benign lesions + superficial carcinomas*
- Larry Owen @ CUVS, UK – late 60s
  - linear accelerator (Addenbrookes Hospital, Cambridge) – coarse fractionation
  - orthovoltage @ CUVS 1970's
- *Ed Gillette @ CSU, USA – mid 60s*
  - *Cobalt-60 – daily fractionation*
- 1980s onwards Co-60 and linaccs into veterinary institutes in Europe & N America

# Veterinary radiotherapy centres in Europe

**25 centres**
- 6 UK
- 19 rest of Europe


# European Society of Veterinary Oncology ESVONC

EUROPEAN SOCIETY OF VETERINARY ONCOLOGY (ESVONC)

On the Inaugural Meeting in Rome, September 24, 1992 the following officers were elected:
President: Prof.Dr. W.Misdorp (Utrecht, The Netherlands)
Vice-President: Prof.Dr. N.T.Gorman (Glasgow, Scotland)
Secretary: Dr. G.R.Rutteman (Utrecht, The Netherlands)
Treasurer/Membership secretary: Dr. E.Hellmén (Uppsala, Sweden)
Meeting Secretary: Dr. L. Rossi (Turin, Italy)
Members: Dr. W. Ponomarkow (Moscow, Russia)
Prof.Dr. A.L. Parodi, (Alfort, France)

The proposed constitution was accepted by all participants.
In view of his pioneering and outstanding work in veterinary oncology, Prof.Dr. L.N. Owen was appointed with great enthusiasm honourary member of the Society.
A yearly membership fee of 30 ECU was agreed, of which 20% will be paid to become a member of the ESVIM automatically.

It was decided that a Newsletter should be made at least four times a year. Editor in Chief of the Newsletter will be Prof.Dr. N.T. Gorman, executive editor will be Dr. M.J. Brearley.

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VCS 1976; JVCS 1994; ABROVET 2004

# ESVONC

Dormant society till 2004

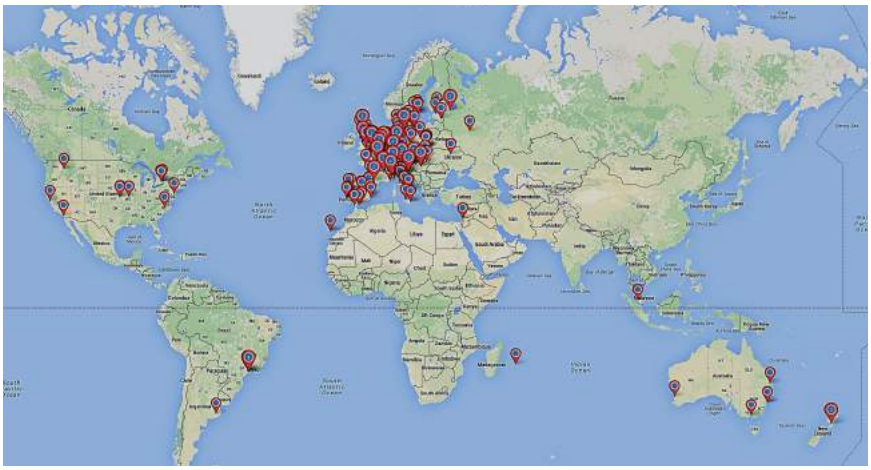
- Hofheim meeting 2004
- ESVONC@ECVIM Barcelona 2004
- change of constitution > membership possible for practitioners
- annual ESVONC congresses
  - Wim Misdorp Award recognises outstanding contributions to the knowledge, pathogenesis, diagnosis, therapy, prevention or control of animal tumour diseases
  - ESVONC poster Award
- rapid increase in membership (also from outside Europe) to nearly 400 members (all vets)
- joined meeting with VCS Copenhagen 2008 = 1st WVCC
- 2nd WVCC Paris 2012
- 3rd WVCC Foz do Iguaçu 2016
- *4th WVCC Tokyo 2020*

# ESVONC membership

**2016**

~300 members

no technicians



# National veterinary oncology societies

**Spain**
Grupo de Especialistas en Oncología (GEVONC)- Asociación de Veterinarios Especialistas en Pequeños Animales (AVEPA)
www.avepa.org

**The Netherlands + Belgium**
Collaborative Veterinary Cancer Centres (SDK)
www.kankerbijdieren.nl

**France**
AFVAC GEO (Groupe d'Etudes en Oncologie)
http://www.afvac.com/fr/document/lassociation/les_groupes_detude/geo/index.htm

**Italy**
SIONCOV
http://cms.evsrl.it/SocSpec/SIONCOV/homepage.stl

AIVO (Associazione Italiana Veterinari per l'Oncologia)
www.aivovet.it

**Poland**
Polskie Stowarzyszenie Lekarzy Weterynarii Małych Zwierząt; section oncology

**Denmark**
Danish Society For Veterinary Oncology
http://www.hundkatcancer.dk/

**Hungary**
Hungarian Veterinary Oncology Society
http://www2.univet.hu/oncol-soc/

**Germany**
Arbeitsgemeinschaft DGK-DVG-Arbeitsgruppe Onkologie in der DGK-DVG"
http://www.dvg.net/

# National veterinary oncology institutes and research foundations

**Italy**
National Reference Center for Veterinary and Comparative Oncology
Istituto Zooprofilattico Sperimentale del Piemonte, Liguria e Valle d'Aosta (CEROVEC – IZS PLV)

La Cittadina Fondazione Studi e Ricerche Veterinarie of Romanengo

**Russia**
Institute development of comparative oncology (IRSO) Moscow

**Romania**
Santacancerhealth Romania
https://www.facebook.com/Santacancerhealth-421694984608932/timeline

**Austria**
Veterinary Oncology Network Austria (VonA)

**EUROPEAN NETWORK OF CANINE LYMPHOMA**
http://www.eu-can-lymph.net

**A joining initiative to generate consensus guidelines for the diagnosis and therapy in canine lymphoma and research partnership**

# ECVIM-CA Residency Programme in Oncology

- Education
  - minimum of 3 years, of which1 year general Internal Medicine
  - minimum of 2 publications and 3 oral presentations at international congresses
  - exam (2 parts)
    - Theoretical: MCQ part and Short Essay part
    - Practical: Oral case management and Practical section with pictures and questions on laptop
- Add-on radiotherapy
  - possible after finishing residency medical oncology or diagnostic imaging
  - education of 18 months
  - separate exam; no separate diplomate title but add-on, e.g. dip ECVIM-CA [Oncol] [add-on radiotherapy]

# ECVIM-CA Residency Programme in Oncology

**United Kingdom**

- Cambridge
- Animal Health Trust
- Edinburgh
- Glasgow
- Liverpool
- London (ACVIM)
- VRCC (ACVIM)


23 residents (14 UK)

**Rest of Europa**

- Lyon
- Munich
- Copenhagen
- Uppsala
- Utrecht
- Vienna

# Education on a European level

ESAVS
European School for Advanced Veterinary Studies

uni.lu
UNIVERSITÉ DU LUXEMBOURG

ESAVS in Luxembourg is a non-profit organisation providing high quality post-graduate study programmes for the veterinary profession.

Since 1991 >8.000 veterinarians from 51 countries have attended the ESAVS courses in 31 different locations.

The study programmes cover ca. 30 veterinary disciplines, **including oncology**, taught by leading experts.

- courses in Europe and in China
- 3-year training programmes started in 1992
- ESAVS organised 400 residential courses
- >350 course masters and principal speakers from 20 countries were involved in teaching

# Use of oncolytic drugs in pet animals

## The Drugs Cascade

Legally vets are required to treat animals with medications that have been safety tested in the species being treated, and have proven efficacy for the condition being treated.

Where there are no products that meet this criterion, vets can prescribe a medicine that is authorised for the same condition but in another species, or as these medications have not been tested in the animal for the condition being treated, for another condition within the same species (**e.g. off-label use of Palladia in other tumours as MCT**).
Use of them requires the vet to inform the owner of this and the owner must give consent for the 'off label' use of the medication.

If there is no suitable medication in these categories, then the vet can prescribe:
**1. a human medicine authorised in their country** >> **oncolytic drugs**
2. a veterinary medicine authorised in a European country

Failing these alternatives, it is possible to use a veterinary medicine that has been manufactured by a pharmacist, veterinary surgeon or manufacturer authorised to manufacture that product.

**Failure to treat animals according to the cascade is a criminal offence.**

# Approval of new oncolytic drugs for veterinary use in Europe

## EMEA


# Approval of new oncolytic drugs for veterinary use in Europe

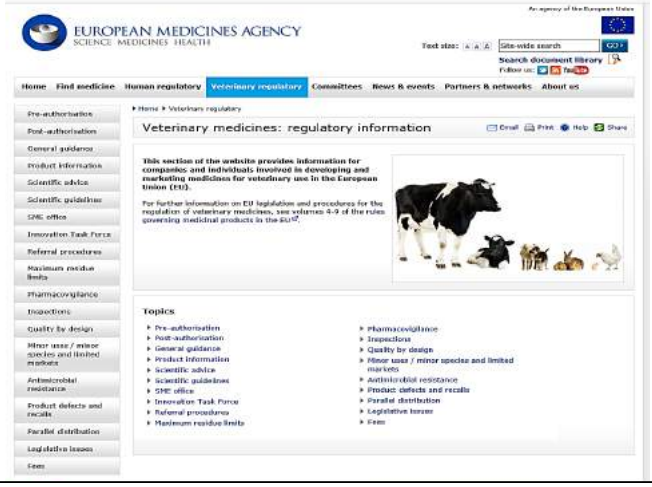
**All medicines must be authorised before they can be marketed and made available to patients. In the European Union (EU), there are two main routes for authorising medicines: a centralised route and a national route.**

**Centralised authorisation procedure**

- pharmaceutical companies submit a **single marketing-authorisation application** to EMEA
- allows the company to market the medicine and make it available throughout the EU on the basis of a single marketing authorisation
- EMA's Committee for Medicinal products for Veterinary Use (CVMP) carry out a scientific assessment of the application
- once granted by the European Commission, the centralised marketing authorisation is **valid in all EU Member States** as well as in the European Economic Area (EEA) countries Iceland, Liechtenstein and Norway

**Benefits for EU citizens**

# Approval of new oncolytic drugs for veterinary use in Europe




- **Masivet**
- **Palladia**
- PACCAL VET-CA1?

# Limitations wide spread development veterinary oncology within Europe

- language barriers
  - communication problems (e.g. national congresses)
  - translation of English textbooks necessary > delay in time
- different levels of knowledge and facilities between universities
- oncology not always part of curriculum
- differences in ethical acceptance of oncological procedures (Scandinavia vs. rest of Europe)
- differences in laws / regulations per country: e.g. in France hospitalization obligatory after chemotherapy delivery and some drugs abandoned
- differences in national economics, which influences the possibilities for expensive treatments

# Veterinary oncological multicentre research in Europe

- difficult to organize multicentre clinical trials
- very limited financial support for basic and clinical research from governments and/or pharmaceutical industries

- increase consortium formation of referral clinics
  - simplifies communication through intranet
  - intrinsically well organized structure
  - easy exchange of knowledge
  - information drawn from a huge database
  - professional formation of clinical trial consortia

# LUPA project


LUPA
*Unravelling common human diseases using dog genetics*

**Dog genetics to understand human diseases**

Dogs help us understanding better the genetic origin of diseases such as **cancer.** Living in the same environment, humans and dogs suffer from the same diseases, but dogs' diseases are genetically a lot simpler.

Since January 2008 twenty veterinary schools from 12 European countries work together to collect DNA samples from purebred dogs; healthy or affected by similar diseases as human.

The LUPA project is a Collaborative Research Project funded by the European Commission under the 7th Research Framework Programme.

# LUPA project

The project, started in 2008 with a €12-million (US$15.4-million) budget, brings together some 100 researchers to study single-gene and complex disorders by genotyping 10,000 dogs.

- **WP1 Cancer**
  - **WP1.1 Mammary Tumours**
    Leader: University of Uppsala
  - **WP1.2 Melanoma**
    Leader: CNRS-Rennes
  - **WP1.3 Soft tissue sarcoma**
    Leader: University of Utrecht
  - **WP1.4 Hemangiosarcoma**
    Leader: University of Cambridge
- WP2 Cardiovascular disorders
- WP3 Inflammatory disorders
- WP4 Neurological disorders
- WP5 Monogenic diseases

# LUPA project

- **WP2 Cardiovascular disorders**
  - WP2.1 Dilated cardiomyopathy - Leader : Antagene
  - WP2.2 Myxomatous mitral valve disease - Leader : University of Copenhagen
  - WP2.3 Identification of genetic determinants of variation in blood pressure, glucose and lipid metabolism in healthy dogs - Leader : University of Liège
- **WP3 Inflammatory disorders**
  - WP3.1 Atopic dermatitis (AD) – Leader : University of Bern
  - WP3.2 Diabetes – Leader : University of Uppsala
  - WP3.3 Hypothyroid disease – Leader : University of Manchester
  - WP3.4 Resistance to Leishmaniosis – Leader : Universitat Autònoma de Barcelona
- **WP4 Neurological disorders**
  - WP4.1 Behaviour – Leader : Norwegian School of Veterinary Medicine
  - WP4.2 Epilepsy – Leader : University of Helsinki
- **WP5 Monogenic diseases**
  - WP5.1 Exocrine Pancreatic Insufficiency (EPI) – Leader : University of Copenhagen
  - WP5.2 Multiple Epiphyseal Dysplasia (MED) – Leader : Norwegian School of Veterinary Medicine
  - WP5.3 Primary Ciliary Diskinesis – Leader : University of Liège
  - WP5.4 Meningoencephalitis – Leader : University College of Dublin
  - WP5.5 Copper-associated disease – Leader : University of Utrecht

# National animal cancer foundations

ACT animal cancer trust

NEDERLANDS KANKERFONDS VOOR DIEREN

ROTE PFOTE Krebsforschung für das Tier


Rákbeteg Állatokért Alapítvány
HUNGARY

FBCA
Fondation Belge contre le Cancer
chez les Animaux asbl

# Breed related cancers

- **National-transcending genetic association projects**
  - histiocytic sarcoma in Bernese Mountain Dogs
    - combined effort of European and US institutes
  - gastric cancer in Longhaired Belgian Shepherd Dogs (NL)
  - thyroid cancer in German Longhaired Pointer (NL)
  - anal sac apocrine gland carcinoma English Cocker Spaniel (UK)
  - mammary tumours English Springer Spaniels (SE)

# ESVONC: the future

**ESVONC**

- central organization through which the European veterinary oncologists communicate with each other
- list serve
- body to discuss with governments
- umbrella for national veterinary oncology societies
- help to develop veterinary oncology in Eastern Europe
- facilitate exchange programs, job advertisements

# Veterinary oncology: is there a global future

global differences in cancer in dogs and cats

→ global clinical trial often biased

# Veterinary oncology: is there a global future

no global differences in how to approach the veterinary oncologic patient **surgically**

VSSO VETERINARY SOCIETY OF SURGICAL ONCOLOGY

www.vsso.org

# Veterinary oncology: is there a global future

ESVONC European Society of Veterinary Oncology

Veterinary and Comparative Oncology

Editors: David J. Argyle and Douglas H. Thamm
Impact Factor 2.733 (*JVIM 1.879*)
ISI Journal Citation Reports © Ranking: 2014: 4/133 (Veterinary Sciences)

Special issues on lymphoma financially supported by VCS, ESVONC, ABROVET, JVCS

The official journal of the:

- Veterinary Cancer Society (VCS)
- European Society of Veterinary Oncology (ESVONC)
- Brazilian Association of Veterinary Oncology (ABROVET)
- Japanese Veterinary Cancer Society (JVCS)
- Italian Veterinary Oncology Society (SIONCOV)

# Veterinary oncology: is there a global future

ESVONC
European Society of Veterinary Oncology

WORLD VETERINARY CANCER CONGRESS

ABROVET
Associação Brasileira de Oncologia Veterinária

VCS VETERINARY CANCER SOCIETY

JVCS Japan Veterinary Cancer Society

**unites once every 4 years veterinary oncologists from all over the world**

# Acknowledgements


- **Malcolm Brearley** (Past President of ESVONC**)**
- **Tom Hendrickx** (ESVONC Treasurer and Membership Secretary)
- **Erik Teske** (Past President of the European Board of Veterinary Specialisation ECVIM-CA)