

USE OF PHYTOTHERAPICS IN DOGS AND CATS.

Severino L.^{1*}, Russo R.¹, Autore G.², Marzocco S.², De Tommasi N.².

¹Department of Pathology and Animal Health, School of Veterinary Medicine, University Federico II of Naples, Italy.

²Department of Pharmaceutical Sciences, University of Salerno, Italy.

Summary

Phytotherapy is one of the most utilized non conventional medicines (NCM) both in human and veterinary medicine. It can be used to mitigate and prevent slight diseases and to support conventional medicine using allopathic drugs. In this paper the Authors report the phytoterapeutics most utilized in both dogs and cats, in which the use of phytoterapeutics is increasing, despite the prejudices of the academic world and of the veterinary practitioners.

Laws regarding the use of non conventional medicines in veterinary practises are lacking in Italy, despite many other countries in Europe; yet National Federation of Italian Veterinaries (F.N.O.V.I.) asserted that the use of NCM has to be considered a veterinary practise at all.

At the end of this paper, the Authors provided many examples of phytotheapic prescriptions to control different illness in both dogs and cats.

Key words: phytotherapy, dog, cat.

*Correspondence: Prof. Lorella Severino, *Dipartimento di Patologia e Sanità Animale, Università degli Studi di Napoli Federico II, via F. Delpino 1, 80137, Napoli, Italy*
E-mail: lorella.severino@unina.it

Introduction

Phytotherapy represents the non conventional medicine (NCM) most utilized in humans; it utilizes plants or plants extracts for the treatment of different slight diseases. Phytotherapy is also very useful to support traditional treatment with synthetic drugs.

Medicinal plants or plant extracts of vegetable origin have been utilized by Asian populations for many centuries as natural remedies for the treatment of several illnesses. In recent years, the use of non conventional medicines is increasing also in Europe, particularly in Northern Countries, Great Britain, France, Germany and Switzerland. It has been evaluated that a percentage variable from 70 to 80 per cent of world population uses NCM for treatment of many different diseases [1]. Also in Italy, is increasing the number of both practitioners using NCM and people requesting phytotherapies practices for themselves or for their pets.

National Federation of Italian Veterinaries (F.N.O.V.I.) established that the use of NCM in veterinary medicine has to be considered a medical act at all and, as a consequence, only vet can used and prescribe it. Yet, laws regarding the use of non conventional medicines in veterinary practises are lacking in Italy, despite many other countries in Europe and there are many prejudices of the academic world and of the veterinary practitioners. In the recent years, a regulation regarding veterinary drugs was promulgated in which homeopathic remedies have been defined but there is nothing about phytotherapeutics (D.L.vo n. 193/2006).

Therapeutic properties of plant extracts are due to great varieties of active compounds such as alkaloids, enzymes and emollient substances; for example, chamomile is used for a long time as tranquilizer and for its antispasmodic properties while echinacea is used as immune-stimulator in prevention of flu and it was known already by Indians which used the infusion prepared with the plant to treat skin lesions, burns and insects or snakes bites [2]. Many plants are traditionally used in phytotherapy by humans (e.g. hypericum, arnica and salvia are been used for a long time for their therapeutic properties) [3, 4]. Phytotherapis are also used in veterinary medicine more and more frequently: botanical species and parts of them (leaves, flowers, roots) more commonly used for galenical preparations in pet therapies are indicated in table 1. Many studies report the effects of phytotherapies in dogs while only few reports their effects on cats. Phytotherapeutic remedies can be useful for respiratory [5], digestive [6, 7, 8] (table 2) and skin [9] (table 3) pathologies; urinary [10] and cardiac diseases [11], in the control of stress and chronic diseases, as idiopathic epilepsy [12], and to avoid risks of possible side effects derived from a

prolonged ingestion of synthetic drugs. Significant reductions of severity and resolution of clinical symptoms, of clear nasal secretions, enlargement of lymph nodes, dry cough, dyspnea and dry lung sounds, are evident after 4 weeks of treatment with Echinacea powder suggesting this preparation as alternative remedy of canine upper respiratory tract infections [5]. Moreover garlic (*Allium sativum*) and eucalyptus (*Eucalyptus globules*), often used also as vermifuges, could be helpful in the treatment of the upper respiratory tract [13] as well as sage (*Salvia officinalis*), thyme (*Thymus vulgaris*) and elder (*Sambucus nigra*) [14] (table 4).

Pyrethrins contained in *Crisanthemum cinerariaefolium* are useful to treat ectoparasites; other plants rich in essential oils and terpenes utilized for this purpose such as *Anethum graveolens*, *Carum carvi*, *Coriandrum sativum*, *Laurus nobilis*, *Mentha piperita* and *Eucalyptus globulus*. Lotions prepared with garlic, lemon and clover (*Trifolium pratense*) could be used to treat scab [15]. Cream prepared with plantain (*Plantago major*) are able to reduce skin inflammation because of calmative, refreshing and emollient properties of this plant [16]. Moreover it has been reported the use of tea tree oil, a volatile oil well known for its broad antibacterial and antifungal activity, as a fast-acting safe alternative to conventional therapy for symptomatic treatment of canine localised dermatitis with pruritis [17]. In a randomized, double-blind, placebo-controlled clinical study it has been reported that PYM00217, a proprietary blend of plant extracts, is an effective and well tolerated treatment for canine atopic dermatitis [18].

Crataegus oxyacantha seems to be useful to treat cardiac disorders because of its tannins and flavonoids with a slight inotropic, peripheral and coronary vasodilatative actions [19, 20]. It has been also demonstrated, in canines, that total flavones from *Elsholtzia blanda*, a traditional Chinese medicine induces a reduction of infarct size and improvement in heart function by inhibiting apoptosis during coronary occlusion [21].

In human phytotherapy *Valeriana officinalis*, *Melissa officinalis* and Bach flowers are commonly used for their tranquillizer properties, and are often utilized to control behavioural or psychological problems in animals without collateral effects and dependence derived from the use of synthetic psychoactive drugs [22].

Recently it has been reported the stimulatory effects of *Panax ginseng* in combination with brewers' yeast (Gerivet) as a stimulant for geriatric dogs [23] and the reduction of behavioural disturbances in elderly dogs supplemented with a standardized Ginkgo leaf extract [24].

Also epilepsy is an important neurological disorder in dog and homeopathic *Belladonna* it has been shown to reduce number of fits in dogs affected by idiopathic epilepsy [12].

Calendula officinalis, *Centella asiatica* and *Commiphora myrrha* can be useful in case of gingivitis; *Euphrasia officinalis* are commonly used in the treatment of conjunctivitis [25] (table 5).

Pseudopregnancy of dog could be treat using substances with hormonal properties present in some vegetables which are able to stimulate ovarian activity and oppose progesterone secretion while estrogens production is enhanced. In these cases several plants are indicated such as *Artemisia vulgaris*, *Calendula officinalis*, *Senecium vulgaris* [26].

Phytotherapics could be useful to reduce side effects of conventional therapies too. Drug-induced nephrotoxicity is an important cause of renal failure in dogs and aminoglycoside antibiotics, as gentamicin, can produce nephrotoxicity due in part by oxidative stress. Sylimarin, the mixture of flavonoligans extracted from *Silybum marinum*, with beneficial antioxidant properties, in addition to vitamin E seem able to decrease gentamicin-induced nephrotoxicity in dogs [27].

Moreover, in case of a serious illness phytotherapy represents only an useful backing to the therapy with chemicals. Many vegetables are used frequently both in dogs and cats to mitigate and/or prevent slight illness or as therapeutic remedies to be utilized together with drugs in a classical therapy.

Conclusion

Although recent studies conducted to isolate and characterize active principles present in many medical plants confirmed multiple properties attributed to such plants for centuries, it seem to be fundamental and desirable a larger contribute of scientific research in this field; above all clinical trials are necessary to highlight the efficacy and posology schemes of phytotherapeutic products in domestic animals to treat slight diseases and as therapeutic remedies to be utilized together with drugs in a classical therapy.

Finally, despite the number of veterinary practitioners using phytotherapy to treat many illnesses of pets is increasing rapidly, laws regarding NCM are still lacking in Italy. Yet different Regions elaborated such laws in recent years. U.M.N.C.V. (Union of Veterinary Non Conventional Medicines) was founded in 2003 and it represents veterinarians expert in phytotherapy, homeopathy, homotoxicology, acupuncture, Chinese traditional medicine. This union underlines the health, social and economic importance of NCM and promotes the legislative recognition of these disciplines wishing regulations to legitimate NCM in veterinary practise

and both identify clearly and protect the practitioners whose training is due to private schools only since official teaching of such subjects is still not present in Italian University. It will be desirable a greater opening of the Academic world, in which strong prejudices are still present, towards non conventional medicines.

Table 1. Plants commonly used in both dogs and cats to mitigate and prevent slight diseases or as therapeutic remedies to be utilized together with drugs in a classical therapy

- | | |
|---|--|
| - <i>Allium sativum</i> (bulb) | - <i>Glycyrrhiza glabra</i> (root) |
| - <i>Arctostaphylos uva-ursi</i> (leaves) | - <i>Juniperus communis</i> (berries) |
| - <i>Artemisia vulgaris</i> (leaves and flowers) | - <i>Melissa officinalis</i> (leaves) |
| - <i>Calendula officinalis</i> (leaves and flowers) | - <i>Mentha piperita</i> (leaves) |
| - <i>Capsella bursa pastoris</i> (aereal part) | - <i>Plantago major</i> (leaves) |
| - <i>Chamomilla matricaria</i> (flowers) | - <i>Rosa canina</i> (berries) |
| - <i>Crataegus oxyacantha</i> (flowers and bark) | - <i>Salvia officinalis</i> (leaves and flowers) |
| - <i>Cynara scolymus</i> (leaves) | - <i>Silybum marianum</i> (fruits) |
| - <i>Echinacea angustifolia</i> (whole plant) | - <i>Taraxacum officinalis</i> (root and leaves) |
| - <i>Equiseto arvense</i> (aereal part) | - <i>Thymus vulgaris</i> (flowers) |
| - <i>Eucaliptus globulus</i> (leaves) | - <i>Tilia cordata</i> (flowers) |
| - <i>Genziana lutea</i> (root) | - <i>Valeriana officinalis</i> (root) |
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Table 2. Plants used in gastro-enteric diseases

Diarrhoea

- Carrot juice

or

- Chamomile infusion with lemon juice
- Vegetable coal 1-4 g per os

or

- Rice decoction (5-10% w.v. ad libitum)

Malabsorbtion syndromes

- Horsetail
- Dog-rose
- Thyme
- Echinacea
- Dandelion
- Liquorice
- Gentian

M.T.*: 2 gtt/kg b.w. a day for 3 weeks

Indigestion

- Mhenta piperita

M.T.*: 2 gtt/kg b.w. a day until remission.

Hepatic illness

- Artichoke
- Thistle

M.T.*: 1-2 gtt/kg b.w. for 4 weeks

Enteric parasitosis

- Burdock
- Echinacea
- Dog-rose
- Liquorice
- Plantain

M.T.*: 2 gtt/kg b.w. a day for 2 weeks

* Mother tincture.

Table 3. Plants used to treat skin illness**Eczema**

- Vaseline: 100 g Topic use
- Juniper oil: 15 g Topic use

Alopecia

- Peruvian balsam 1 g
- Camphor 5 g
- Menthol 1 g
- Alcohol 70° 50 g
- Castor oil 50 g
- Olive oil 50 g

Spreading 2 times a day only on the ill area

Table 4. Plants useful to treat upper respiratory tract diseases

- **Infections**

Echinacea (powder): 0.1 g/kg b.w. a day for 8 weeks

- **Cough**

Thyme (essential oil): 3 gtt/kg b.w. a day until remission

Syrup: 2 tea spoons 3-4 times a day until remission

or

Linden (infusum): 2 tea spoons 4 times a day until remission

Table 5. Plants used for other different pathologies.**Anxiety**

- Balm-mint
- Valerian
- Hawthorn

M.T.*: 0.5-1 gtt/kg b.w. 2-3 times a day

Uterine haemorrhage

- Bursa pastoris M.T.*: 2-6 tea spoons a day until remission

or

- Bursa pastoris decoction (15% w.v.) 3-6 tea spoons a day until remission

Ascariidiosis

- Garlic

M.T.*: 3 gtt/kg b.w. in the morning and evening on an empty stomach for 3 days

(If necessary repeat the treatment every 10 days)

Cystitis

- Bearberry

M.T.*: 2 gtt/kg b.w. a day until remission

Gingivitis

- Calendula
- Centella
- Myrrh

M.T.*: swabbing the wound 2-3 times a day until remission

Conjunctivitis

- Hamamelis (*external use only*) 3 times a day until remission

* Mother tincture.

References

- 1) Hahn I, Zitterl-Eglseer K, Franz C. Phytomedicine in dogs and cats: web-based survey among veterinarians in Austria, Germany and Switzerland. *Schweiz Arch Tierheilkd* 2005;147:135-141.
- 2) Borchers AT, Keen CL, Stern JS, Gershwin ME. Inflammation and native American medicine: the role of botanicals. *Am J Clin Nutr* 2000;72:339-347.
- 3) Butterweck V, Schmidt M. St. John's wort: role of active compounds for its mechanism of action and efficacy. *Wien Med Wochenschr* 2007;157:356-361.

- 4) Zaffani S, Cuzzolin L, Benoni G. Herbal products: behaviors and beliefs among Italian women. *Pharmacoepidemiol Drug Saf* 2006;354-359.
- 5) Reichling J, Fitzi J, Furst-Jucker J, Bucher S, Saller R. Echinacea powder: treatment for canine chronic and seasonal upper respiratory tract infections. *Schweiz Arch Tierheilkd* 2003;145:223-231.
- 6) Atta AH, Mounair SM. Evaluation of some medicinal plant extracts for antidiarrhoeal activity. *Phytother Res* 2005;19:481-485.
- 7) Berschneider HM. Complementary and alternative veterinary medicine and gastrointestinal disease. *Clin Tech Small Anim Pract* 2002;17:19-24.
- 8) Palombo EA. Phytochemicals from traditional medicinal plants used in the treatment of diarrhoea: modes of action and effects on intestinal functions. *Phyther Res* 2006;20:717-724.
- 9) Vender R.B. Adverse reactions to herbal therapy in dermatology. *Skin Therapy Letter* 2003;8:5-8.
- 10) Pollen SM. Renal disease in small animals: a review of conditions and potential nutrient and botanical interventions. *Altern Med Rev* 2001;6:46-61.
- 11) Valli G, Giardina EG. Benefits, adverse effects and drug interactions of herbal therapies with cardiovascular effects. *J Am Coll Cardiol* 2002;39:1083-1095.
- 12) Varshney JP. Clinical management of idiopathic epilepsy in dogs with homeopathic Belladonna 200C: a case series. *Homeopathy* 2007;96(1):46-48.
- 13) Bjarnsholt T, Jensen PO, Rasmussen TB, et al. Garlic blocks quorum sensing and promotes rapid clearing of pulmonary *Pseudomonas aeruginosa* infections. *Microbiology* 2005;151:3873-3880.
- 14) Boskabady MH, Aslani MR, Kiani S. Relaxant effect of *Thymus vulgaris* on guinea-pig tracheal chains and its possible mechanism(s). *Phyther Res* 2006;20:28-33.
- 15) Erler F, Ulug I, Yalcinkaya B. Repellent activity of five essential oils against *Culex pipiens*. *Fitoterapia* 2006;77:491-494.
- 16) Samuelsen AB. The traditional uses, chemical constituents and biological activities of *Plantago major* L. A review. *J Ethnopharmacol* 2000;71:1-21.
- 17) Reichling J, Fitzi J, Hellmann K et al. Topical tea tree oil effective in canine localised pruritic dermatitis-a multi-centre randomised

- double-blind controlled clinical trial in the veterinary practice. *Dtsch Tierarztl Wochenschr* 2004;111(10):408-414.
- 18) Ferguson EA, Littlewood JD, Carlotti DN, Grover R, Nuttall T. Management of canine atopic dermatitis using the plant extract PYM00217: a randomized, double-blind, placebo-controlled clinical study. *Vet Dermatol* 2006;17(4):236-243.
 - 19) Kim SH, Kong KW, Kim KW, Kim ND. Procyanidins in crataegus extract evoke endothelium-dependent vasorelaxation in rat aorta. *Life Science* 2000;67:121-131.
 - 20) Long SR, Carey RA, Crofoot KM, Proteau PJ, Filtz TM. Effect of hawthorn (*Crataegus oxycantha*) crude extract and chromatographic fractions on multiple activities in a cultured cardiomyocyte assay. *Phytomedicine* 2006;13:643-650.
 - 21) Ling H, Lou Y, Wu H, Lou H. Total flavones from *Elsholtzia blanda* reduce infarct size and improve heart function during acute myocardial infarction by inhibiting myocardial apoptosis in canines. *Acta Cardiol* 2005;60:295-301.
 - 22) Wheatley D. Medicinal plants for insomnia: a review of their pharmacology, efficacy and tolerability. *J Psychopharmacol* 2005;19:414-421.
 - 23) Hielm-Björkman A, Reunanen V, Meri P, Tulamo RM. Panax Ginseng in combination with brewers' yeast (Gerivet) as a stimulant for geriatric dogs: a controlled-randomized blinded study. *J Vet Pharmacol Ther* 2007;30(4):295-304.
 - 24) Reichling J, Frater-Schröder M, Herzog K, Bucher S, Saller R. Reduction of behavioural disturbances in elderly dogs supplemented with a standardised Ginkgo leaf extract. *Schweiz Arch Tierheilkd* 2006;148(5):257-263.
 - 25) Lans C, Turner N, Khan T, Brauer G, Boepple B. Ethnoveterinary medicines used for ruminants in British Columbia, Canada. *J Ethnobiol Ethnomedicine* 2007;26:3-11.
 - 26) Lucisano A, De Liguoro M, Piante per la cura degli animali. In: Capasso F, De Pasquale R, Grandolini G, Mascolo N. *Farmacognosia – Farmaci naturali, loro preparazione ed impiego terapeutico*. Springer, Milano, 2000:403-409.
 - 27) Varzi HN, Esmailzadeh S, Morovvati H et al. Effect of silymarin and vitamin E on gentamicin-induced nephrotoxicity in dogs. *J Vet Pharmacol Ther* 2007;30(5):477-481.