RESEARCH ARTICLE (Open Access)

# Some contemporary concepts of Euthanasia in Veterinary

PASKAL GJINO[1], ERINDA LIKA[1]

[1]Department of Clinical Subjects, Faculty of Veterinary Medicine, Agricultural University of Tirana, Albania

*Corresponding author; E-mail: paskalgjino@yahoo.it

**Abstract**

Euthanasia means "good" or "sweet" death that occurs in animals, which must occur in a fast and easy way, painless, and without anxious. Euthanasia consists in the use of preparations that lead to the death of the animal. When the prognosis of some pathologies is disadvantageous and all therapeutic ways are exhausted, and when the cost of recovery is higher than the economic value of the animal itself, the necessity to eliminate it is indispensable. The conduct of this procedure should be based on several criteria: Must be humane, painless, without anxious, muscular spasms, nausea, screaming, etc; must be safe for the staff; there must be quick action; to be as economical; it should not cause changes in the tissue level by altering the morphogenetic structure during necrotizing; to be effective and irreversible. Given that the number of cases of animal deaths has increased significantly in today's world, this has enabled the study and practical use of euthanasia. Euthanasia is an act of thought and applied solely and exclusively to those situations in which the disease causes much suffering to an animal, is an act of compassion, pain towards a living being that cannot be healed. The practical realization of this study was made possible by taking into consideration all cases presented at the Clinic of the Faculty of Veterinary Medicine during the period October 2015 - October 2017. Further completion of the study was carried out through experimentation with animals used for didactic purposes near this Faculty. During the study period, 72 animals were subjected to Euthanasia. Evaluation of the euthanasia technique was done by keeping in mind some of the extreme pain clinical signs that accompanied the patient's death. In some cases, Euthanasia techniques were followed with the advance application of general anesthesia and in other cases direct Euthanasia was applied.

**Keywords**: Euthanasia, Veterinary, animals, painless, anesthesia.

## 1. Introduction

Euthanasia is defined as "the procedure of killing animals quickly and painlessly" [1, 7. 11]. Euthanasia is an act of thought and applied only and exclusively to those situations in which the disease causes a lot of suffering to an animal, is an act of mercy, compassion towards a living being who no longer has the possibility of healing, disadvantageous prognosis and who suffers a lot. Talking about euthanasia means talking about death and even about a "good or good death" even though that's what we will look at just to relieve pain and suffering. This procedure is viewed as the latest therapeutic act of veterinary surgeon for animal welfare. The term "Euthanasia" originates from Greece and gives the meaning of "good death" [3, 6]. A "good death" is what happens quickly, painless and without anxiety. In the context of this word, euthanasia means the act of causing a human death in animals. It was the English philosopher Francis Bacon who introduced this term to the modern language of the theory established by him "Progress of Recognition" [8, 10]. At Bacon he invited doctors to not forsake the incurable sick and help them suffer as little as possible. Euthanasia methods can be classified as: 1. Physical method, 2. Chemical Method. They cause death by relying on three basic mechanisms. Hypoxia, direct or indirect; Direct deprivation of neurons vital to life; Physical destruction of brain activity and destruction of vital neurons. Physical methods include: cervical dislocations, decapitation, headaches, blood loss and firearms killing. Chemical Methods: Develop by introducing a toxic agent into the body by injection or inhalation. These euthanasia methods should be carried out by qualified personnel in accordance with the procedures to be followed.

**Injectable agents**

Barbiturate. One of the most humane methods of euthanasia is the use of barbiturates at triple doses compared to general anesthesia (overdose 150mg / kg), I / V, I / P or S / C routes. Widely used for euthanasia[4. 6. 12]. In this case the animal passes into sleep and in immediate calm death, without fear and pain. Cardiac arrest in this case is immediate. Injecting I / P operates much slower than the I / V path, but is easier for a single operating agent. I / P is used in cases where I / V injection is stressful or dangerous for the animal and man (operator) or when it is not easy to find the vein.

**Chloralhydrate.** Even the use of chloralhydrate in the form of 10% solution at 1gr / kg dose is deadly. The morpho-pathological framework in this case records enlargement of the heart, myocardial failure and pulmonary congestion.

**Tanax.** The preparation that is used today more widely for animal euthanasia is Tanax [1, 3]. It has strong narcotic effects associated with paralysis of the skeletal and respiratory muscles leading to rapid vascular collapse. Tanax can be injected with I \ V 0.3mg / kg or I / P or S / C 1-10ml. Animals die very quickly without showing any signs of pain.

**Dohlethal.** A similar preparation to Tanaxin is also Dohlethal which is used in small animals at doses of 2-4 ml, while in large animals up to 10ml.

## 2. Material and Methods

The practical realization of this study was made possible by taking into consideration all cases presented at the Clinic of the Faculty of Veterinary Medicine during the period October 2010 - October 2017. Further completion of the study was carried out through experimentation with animals used for didactic purposes near this Faculty. Special study assistance was provided by some private clinics in Tirana Region, of which a large number of valuable data were obtained. For this purpose, all the cases in which Euthanasia was recommended were taken into consideration. These cases were numerous and in many different situations.

## 3. Results and Discussion

The used substances and the number of animals subjected to Euthanasia are given in Table 1.

**Table 1**. Substances and the number of animals subjected to Euthanasia.

| **Type of Euthanasia** | **Type of animal** |
|---|---|
| Ether | 8 dog; 2 cats; 4 rabbits; 2 single hoves |
| Acaprine | 9 dog; 4 cats |
| Apart | 6 dogs; 6 cats |
| Euthanal | 5 dog; 4 cats |
| Dohletal | 6 dogs; 5 cats |
| Tanax | 6 dogs; 3 cats |
| **A total of animals** | **72** |

During the study period, 72 animals were subjected to Euthanasia. The animal reaction was different in the different preparations. Ether, Apard and Acaprin are preparations that can be used for Euthanasia but the death caused in some cases was not very human. During the use of these preparations, convulsions of the limbs and the body were observed. The time of the animal's death is great, this causes the animal to have a suffering and distressed death. Nowadays, these preparations like Ether, Apart and Acaprin are not used for the reasons mentioned above. The most used preparations nowadays are: Euthanals, Dohletal, Tanax [9, 11]. During the use of these preparations the animals manifested a sweeter death without pain and anxiety. In these cases, convulsions were not observed and the time of death was very fast. The use of euthanic preparations was always performed after the general anesthetic was applied. Evaluation of the euthanasia technique was done by keeping in mind some of the qualitative clinical signs of signs that accompanied the patient's death. Through these

qualitative indicators was made possible the selection of the best euthanasia technique [2, 5]. These indicators consisted of signs such as:

- Manifestation of disturbance phenomens
- Irritation coupled with shouts
- Severe convulsive vibrations
- Extreme irritation followed by aggression phenomena
- Normal but prolonged death of 10-15 minutes
- Normal fast death from 2-5 minutes
- Immediate and peaceful death

In some cases, Euthanasia techniques were followed with the advance application of general anesthesia and in other cases direct Euthanasia was applied. In the Table 2. data are obtained during the application of Euthanasia without associated with general anesthesia.

**Table 2.** Clinical Indicators during Euthanasia without associated with general anesthesia

| Type of Euthanasia | Concern | Irritation | Convulsions | Convulsion Twitter | Normal long-lasting death | Normal fast death | Quiet death |
|---|---|---|---|---|---|---|---|
| **Ether** | ++ | ++ | + | ++ | * | | |
| **Acaprine** | + | + | ++ | ++ | | * | |
| **Apart** | ++ | ++ | ++ | +++ | * | | |
| **Euthanal** | + | - | - | - | | | * |
| **Dohlethal** | + | - | - | + | | | * |
| **Tanax** | + | - | - | - | | * | |

Preliminary application of general anesthesia is a procedure that significantly facilitates and improves the clinical manifestation of the patient's death. In Table 3. summarized the data of qualitative indicators during the performance of Euthanasia.

**Table 3.** Clinical indicators during Euthanasia accompanied with general anesthesia

| Type of Euthanasia | Concern | Irritation | Convulsions | Convulsion Twitter | Normal long-lasting death | Normal fast death | Quiet death |
|---|---|---|---|---|---|---|---|
| **Ether** | + | + | + | + | * | | |
| **Akaprine** | + | + | + | + | | * | |
| **Apart** | + | + | + | ++ | * | | |
| **Euthanal** | + | - | - | - | | | * |
| **Dohlethal** | + | - | - | - | | | * |
| **Tanax** | + | - | - | - | | * | |
| **Bleeding** | ++ | ++ | + | + | * | | |

Based on this data and in the clinical manifestation of the above mentioned indicators, conclusions were drawn to the best and recommended Euthanasia technique.

## 4. Conclusions

- Euthanasia is a procedure that is often performed on animals.
- Conducting euthanasia requires in-depth knowledge of contemporary techniques on euthanasia.
- Substances with toxic action such as ether, apard, akapris can realize euthanasia, but death in these cases is painful and with phenomena of excitement.
- Euthanasia substances like: dohletal, euthanal, tanax are excellent action preparations in the realization of a quiet and painless euthanasia.
- Before applying various euthanasia techniques, it is advisable to apply general anesthesia.

## 5. References


1. Andrews EJ, Bennet BT, Clark JD, et al. 1993 **Report on the AVMA panel on euthanasia.** J Am Vet Med Assoc 1993; 202: 230–247.
2. Arluke A. **Coping with euthanasia: a case study of shelter culture**. J Am Vet Med Assoc 1991; 198:1176–1180.
3. Close B, Banister K, Baumans V, Bernoth EM, Bromage N, Bunyan J, Erhardt W, Flecknell P, Gregory N, Hackbarth H, Morton D, Warwick C(1996). **"Recommendations for euthanasia of experimental animals**: Part1". Laboratory animals. **30**(4):293–316(295). doi:10. 1258/002367796780739871. PMID8938617.
4. Conlee KM, Stephens ML, Rowan AN, King LA(April2005). **"Carbon dioxide for euthanasia:concerns regarding painand distress, with special reference to miceandrats".** Lab. Anim. **39**(2):137–61. doi:10. 1258/0023677053739747. PMID15901358.
5. Cooper JE, Ewbank R, Platt C, et al. **Euthanasia of amphibians and reptiles**. London: UFAW/WSPA, 1989.
6. Greyhavens T. **Handbook of pentobarbital euthanasia**. Salem, Ore: Humane Society of Willamette Valley, 1989; 1–126.
7. Grier RL, Clovin TL**. Euthanasia guide** (for animal shelters). Ames, Iowa: Moss Creek Publications, 1990.
8. Hart LA, Hart BL, Mader B. **Humane euthanasia and companion animal death: caring for the animal, the client, and the veterinarian**. J Am Vet Med Assoc 1 990; 197:1292–1299.
9. Schwartz, Jeffrey y Begley, Sharon (2002). **The Mind and the Brain: Neuroplasticity and the Power of Mental Force**, Harper Collins, p. 161.
10. Simon, Stephanie (27 January 2002). **"Pet Food Report Leadsto Pile-Up At Animal Shelters–Rendering Plant StopsTaking Carcasses".** Washington Post. p. A14.
11. Tom J. Doherty, Alex Valverde, **Manual of Equine Anaesthesia and Analgesia**, Blackwell Publishing 2006 (p. 352)
12. Wetzel RW, Ramsay EC. **Comparison of four regimens for oral administration of medication to induce sedation in cats prior to euthanasia**. J Am Vet Med Assoc 1998; 213:243–245.