Field Study on the Beneficial Effects of Fresh Herbals against Warts in Cattle: A Review of Clinical Cases

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A B S T R A C T

A study was conducted to evaluate the clinical effectiveness of a herbal preparation, in crossbreed cattle, affected by warts. The incidence of warts (n=13) was higher in females (92.3%) than males (7.69%) and younger animals were affected more (61.5%). The wart-lesions were found to be more in the teats (30.7%) and neck (23.07%). The time needed for the healing of warts was recorded individually in all the cattle under study, of which six cattle (46.1%) were observed for 4 months. The herbal paste was made freshly of Euphorbia hirta latex and leaves, Allium sativum bulbs, Musa paradisiaca peel, Acalypha indica leaves and Zingiber officinale rhizomes. All the animals were treated externally twice a day till the warts got completely cleared. Monitored once in ten days for signs of recovery for 60 days. By the end of second week, warts showed signs of healing to the herbal treatment. The overall success rate was achieved in 11 (84.6 %) cattle with a mean recovery period of 28.3 days. This real-time field study, has proved that this herbal remedy was useful in the treatment of warts in cattle, in a stand-alone mode obviating the use of any synthetic chemical(s) and also found to be very economical for the farmer(s).

Keywords: Cattle, Warts, Herbal remedies

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Introduction

Warts and Papillomatos is benign in nature and are characterized by small to medium sized growths on skin or mucous membranes. Bovine Papilloma virus (BPV) is a group of DNA viruses of the family Papillomaviridae that causes papilloma and warts in cattle. Thirteen types of bovine papilloma viruses have been identified in cattle (Devilliers et al., 2004). Cattle types show site-specificity (Table 1). BPV 1 and BPV 2 comprise the major cutaneous fibropapilloma (Catroxo et al., 2013). Warts develop after the introduction of an infective virus through the cuts, abrasions; micro trauma of the skin, BPV induces the formation of papilloma or warts by targeting the keratinocytes. Infection of epithelial cells results in hyperplasia with subsequent degeneration and hyperkeratinisation. These benign changes occur usually 4 to 6 weeks after exposure (Campo, 2002). Warts occur due to several factors including inheritance, hormonal disorders and suppressed immune system (Campo et al., 1997). The immunity of animals plays a major role in acquiring the infection (Inayat et al., 1999). The cattle
carrying the virus as reservoir and source of
the infection, intermediate sources of
infection could be contaminated fences,
feeders, ropes etc. (Nasir and Campo, 2008).

Warts have been widely found to affect cattle
worldwide. In India Bovine cutaneous warts
identified as BPV type 1 and type 2 was
reported (Singh et al., 2009). BPV type 10
warts in the teat were recorded by Rai et al.,
(2011). Campo (2006) reported several
economic consequences, in a cow with teat
papillomas that cannot be milked and young
calves cannot suckle, and often the
pedunculated papillomas snap off, the sites
become infected and mastitis may ensue with
distortion of the milk canals.

A wart is an important disease leading to
economic depreciation of animals and leads to
deterioration of the quality of leather. The
wart may progress to cancer due to the
synergistic action of genetic or environ-
mental co-factors (Leal et al., 2003).

Somvanshi and Sharma (1986) have stated
that there is no effective allopathic veterinary
medicine available for wart(s) management.

According to the World Health Organization
(WHO) about 80% of world population
depends on traditional medicines, especially
herbal medicines for their Primary Health Care
needs. Ethno veterinary medicine (EVM) is a branch of science which deals
with the study of traditional knowledge,
methods, skills and practices used for treating various ailments of livestock (Corkle, 1986). Ethno veterinary medicinal practices are often cheap, safe, and based on local available resources and strengths. EVM can provide useful alternatives to conventional animal health care (Kumar, 2002). In developing countries, low-income category such as farmers, in remote and isolated village(s) use folk medicine for the treatment of common infections. The study was aimed to evaluate
the herbal remedies used in the field in cattle suffering from warts.

Materials and Methods

Study area: The study was conducted in
thirteen crossbreed cattle affected with warts
presented at the Veterinary dispensary,
Kottagudi, Melur (Tk), Madurai (Dist), Tamil
Nadu India (2017 to 2019).

Animals: Thirteen crossbreed cattle affected
with warts in different seasons and times,. The age of animals ranged from 10 months to
6.5 years, the duration of warts occurred from
one month to six months.

Clinical examination: Body temperature and
the appetite of the animals were normal. Body
condition of heavily affected cattle was
generally poor (Constable, P. D et al., 2017).
The site, size and diameter of warts were
recorded as shown in the table 2.

Ingredients

| Ingredient                        | Description                        |
|----------------------------------|------------------------------------|
| Euphorbia hirta                  | One handful of fresh leaves with latex |
| Allium sativum (Garlic)          | 3 bulbs                             |
| Musa paradisiaca                 | 2 peels                             |
| Acalypha indica                  | One handful of fresh leaves         |
| Zingiber officinale (ginger)     | 10 grams of fresh rhizome           |

The above ingredients were enough for a
10cm diameter size warts, the herbal remedies
paste was prepared, depending on the size of
warts.

Preparation

Garlic and ginger were crushed into a fine
paste, after that the inner side of the banana
peel was scraped by the blunt side of the
knife, and this banana peel paste was taken, then added Euphorbia hirta and Acalypha
*indica* leaves and mixed together to a fine paste.

**Application**

The latex from the *Euphorbia hirta* plant was applied to the root of the warts. Subsequently, the prepared herbal remedies paste was applied over the affected part of the animal body twice in a day till the warts were completely disappeared. All the animals were monitored once in ten days for signs of recovery for up to 60 days. No other therapy was given during the treatment.

**Results and Discussion**

Warts have recently grown in importance due to its association with cancer and immune suppression conditions (Campo, 2002). Animals can also develop warts extensively in the upper gastrointestinal tract and consequently, present difficulty to feed and breathe, resulting in a debilitated animal that may cause death (Campo, 2002).

In the present study, the incidence rate of warts was significantly higher in females 12 (92.3%) than in males 1(7.69%). Previously (Mohammed *et al.*, 2017) reported similar findings that the incidence was higher in females (79.14%) than males (20.85%). Infection may occur high in female cattle, usually under stress factors, such as gestation, lactation and progression of age. On another hand, male cattle are usually directed to fattening and meat production and are mostly slaughtered at the age of two years or less (Fayez Awadalla Salib *et al.*, 2008).

In the current study out of 13 animals, two animals were less than 1 year of age, six animals were 2 to 3 years of age, and two animals were 4 to 5 years of age and three animals were over 5 years of age. It appears that the younger age-group are more susceptible than the adult as described by Otter and Leonard (2003). They recorded warts at young ages; it is due to ill-development immune system, alkaline Ph of the skin of young ages, most of the time these animals have been weaned early with less maternal derived antibodies that may facilitate the virus infection.

In the current study warts were found in different parts of the body. The number of cases and percentage of warts lesions regarding the site was recorded as follows: face 2 (15.3%), eye 2 (15.3%), leg 1 (7.6%), teat 4 (30.7%), udder 1 (7.6%) and neck 3 (23.07%). The most commonly affected sites were teat and neck. Devilliers *et al.*, (2004) have reported similar results. Mc Murray *et al.*, (2001) indicated that warts differ in their tissue specificity depending on the genotype of the virus and associated disease.

Size of warts, less than one centimeter diameter warts got completely disappeared at the end of 2nd week of treatment. Warts with two-centimeters to ten- centimeters diameter warts got completely disappeared by the end of the 6th week. Warts above ten-centimeter diameter took 7 to 8 weeks to disappear. Two animals showed no improvement beyond 60 days. The time taken for warts to disappear may be varying on the virus type, location, and size of warts. On the other hand, may be farmers not implementing these herbal remedies properly.

Ethno veterinary practices are generally cheap, safe and based on local resources and strengths. These can provide useful alternative to conventional animal health care (Kumar, 2002).

Basker Joshi (2011) reported that local tribes and vanguijars of Kashipur (Uttarakhand) used *Euphorbia hirta* milky latex in the treatment of warts. *Euphorbia hirta* plant is used for its anti-bacterial, anti-malarial, anti-inflammatory, anti-fungal anti-oxidant property (Kumar *et al.*, 2010) (Fig. 1–4).
Table 1 Types of bovine papilloma virus

| SL.NO | TYPES                        | LESIONS                                                                 | REPORTED BY                  |
|-------|------------------------------|-------------------------------------------------------------------------|------------------------------|
| 1     | BPV 1, BPV2 and BPV 13       | Fibropapillomas are associated with sub epithelial fibroblasts          | Jelinek and Tachezy (2005)   |
| 2     | BPV 3,4,6,9,10,11,12.        | Epitheliotropic, inducing the formation of true papilloma without the involvement of fibroblasts | Jarrett et al., 1984         |
| 3     | BPV 5 and 8                  | Potential to induce both fibropapillomas and true papilloma             | Bloch et al., 1994           |
| 4     | BPV 7                        | Cutaneous papilloma                                                     | Ogawa et al., 2007           |

Table 3 Scientific classifications

1. *Euphorbia hirta*
   - **KINGDOM**: Plantae
   - **FAMILY**: Euphorbiaceae
   - **GENUS**: Euphorbia
   - **SPECIES**: hirta
   - **BINOMIAL NAME**: Euphorbia hirta
   - **TAMIL NAME**: Amman pacharisi

2. *Allium sativum*
   - **KINGDOM**: Plantae
   - **FAMILY**: Amaryllidaceae
   - **GENUS**: Allium
   - **SPECIES**: sativum
   - **BINOMIAL NAME**: Allium sativum
   - **TAMIL NAME**: Vellaipoondu

3. *Musa paradisiaca*
   - **KINGDOM**: Plantae
   - **ORDER**: Zingiberales
   - **FAMILY**: Musaceae
   - **GENUS**: Musa
   - **SPECIES**: paradisiaca
   - **BINOMIAL NAME**: Musa paradisiaca
   - **TAMIL NAME**: Vaalaipalam

4. *Acalypha indica*
   - **KINGDOM**: Plantae
   - **FAMILY**: Euphorbiaceae
   - **GENUS**: Acalypha
   - **SPECIES**: indica
   - **BINOMIAL NAME**: Acalypha indica
   - **TAMIL NAME**: Kuppaimeni

5. *Zingiber officinale*
   - **KINGDOM**: Plantae
   - **FAMILY**: Zingiberaceae
   - **GENUS**: Zingiber
   - **SPECIES**: officinale
   - **BINOMIAL NAME**: Zingiber officinale
   - **TAMIL NAME**: Inji
### Table 2: Baseline characteristics of affected animals

| Case no | Age (In months) | Site of warts | Warts appearance | Diameter of warts | Duration of warts (In months) | Response to treatment |
|---------|----------------|---------------|------------------|------------------|-------------------------------|----------------------|
| 1       | 10             | Face          | Pea-nut appearance | <1cm             | 2                             | Regression started after 1st week and wart disappeared at the end of 2nd week (12 days) |
| 2       | 24             | Eye           | Finger-like projection appearance (Multiple warts) | 3cm-5cm          | 3 to 4                        | Regression started after 2nd week and wart disappeared at the end of 5th week (33 days) |
| 3       | 36             | Leg           | Finger-like projection appearance | 3cm             | 2                             | Not-recovered |
| 4       | 10             | Face          | Pea-nut appearance | 2cm             | 2                             | Regression start after 1st week and wart disappeared at the end of 2nd week (15 days) |
| 5       | 60             | Teat          | Pea-nut appearance (Multiple warts) | 1cm - 2cm        | 3 to 4                        | Regression start after 2nd week and wart disappeared at the end of 5th week (31 days) |
| 6       | 72             | Teat          | Granule-like appearance (Multiple warts) | 1cm - 2cm        | 3 to 4                        | Regression start after 2nd week and wart disappeared at the end of 5th week (35 days) |
| 7       | 78             | Udder         | Pea-nut appearance (Multiple warts) | 1cm - 2cm        | 5 to 6                        | Regression start after 2nd week and wart disappear noticed after the 6th week (39 days) |
| 8       | 30             | Neck          | Cluster warts (Bunch of grapes) | >10cm            | 5 to 6                        | Regression start after 4th week and wart disappear at the end of 7th week (49 days) |
| 9       | 24             | Neck          | Cluster warts (Bunch of grapes) | >10cm            | 5 to 6                        | Regression start after 4th week and wart disappear noticed after the 8th week (52 days) |
| 10      | 30             | Eye           | Finger-like projection appearance | 5cm             | 5 to 6                        | Regression start after 2nd week and wart disappeared at the end of 5th week (32 days) |
| 11      | 36             | Neck          | Lemon like appearance | 6cm             | 3 to 4                        | Not-recovered |
| 12      | 72             | Teat          | Pea-nut appearance (Multiple warts) | 1cm - 2cm        | 3 to 4                        | Regression start after 2nd week and wart disappear noticed after the 6th week (38 days) |
| 13      | 48             | Teat          | Pea-nut appearance (Multiple warts) | 1cm - 2cm        | 3 to 4                        | Regression start after 2nd week and wart disappeared at the end of 5th week (32 days) |

The overall success rate with mean recovery period 11(85.6%) with 28.3 days
Fig.1 (A) Warts around eye before treatment (B) Complete regression of warts after treatment (33 days)

Fig.2 (A) Warts in teat of cow - Before treatment. (B) Complete regression of warts - After treatment (35 days)

Fig.3 (A) Warts on the neck of animals - Before treatment B) Complete regression of warts - After treatment (49 days)
Zabra beygom mosavi et al., (2018) reported 69.7% of human warts patients showed complete clearing of the lesions by using garlic. In vitro studies on garlic showed that it can enhance Natural Killer (NK) cells, which are an important part of the immune system in fighting cancers, viruses and certain bacteria (Agarwal 1996). Silverberg NB (2002) reported that garlic was effective on the complete resolution of cutaneous warts.

Sampath kumar et al., (2012) reported anti-fungal, anti-biotic and anti-oxidant activity found in the peel of ripe bananas, and also used to treat the warts and helps to reduce the irritation and inflammation of the skin.

Islam et al., (2015) reported that Acalypha indica contains a phytol compound, and they reported phytol compound has anti-microbial, anti-mutagenic, anti-tumoral, cytotoxic and anti-teratogenic.

Awang (1992) recorded that the ginger revealed anti-inflammatory, anti-oxidant, anti-microbial activities and also utilized to treat warts.

Though there are a lot of remedies available to treat warts such as anthiomaline, autogenous blood, homeopathy remedies etc, with levels of success vary. No published study was found on the usage of herbal remedies to treat warts in the veterinary field. At the moment, our aim was to establish a clinically useful and affordable treatment for curing warts.

In the present study the overall complete clearance was achieved in 11 (84.6 %) animals with a mean recovery period of 28.3 days. This report was comparatively higher than the earlier reports of (Kavitha et al., 2014) who achieved a success rate of anthiomaline (81%), local application of thuja ointment (58%), oral treatment of thuja (70%): However this success rate was lower than the other studies of Kavitha et al., (2014) who achieved a 92% success rate by using autogenous blood.
However, Terziev et al., (2015) reported that the autogenous vaccine yielded good results but only for small warts up to 1-2 cm diameter, whereas the outcome in larger growth was not satisfactory, as well as Silva et al (2004) reported it was economically viable to repeat the continuous treatment in animals that did not recover after the first therapeutic intervention. In this situation, these herbal remedies can be used to treat the warts because, it cured the above 10 cm diameter size warts and very much economical. Farmers can treat warts on their animals by using this herbals available in and around their home. This result clearly proved that herbal remedies were effective (84%) for the treatment of warts in animals.

The study demonstrated that herbal paste containing *Euphorbia hirta*, *Allium sativum*, *Musa paradisiacal*, *Acalypha indica* and *Zingiber officinale* was potentially better to treat warts in cattle and thus provide a cost effective option to treat warts, even when warts are bigger and diffused.

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