

## SHORT COMMUNICATION

## EFFECT OF AGERATUM CONYZOIDES LEAF EXTRACT ON HISTOLOGICAL STRUCTURE OF MAMMARY GLAND OF WISTAR ALBINO RAT

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**ABSTRACT:**

There are many causes of non-lactation after delivery in some dairy mammals and human female. In present investigation study was carried out to find out effect of Ageratum conyzoides leaf extract on histological structure of non lactating mammary gland of wistar white albino rat female. Ageratum conyzoides is supposed to induce lactation in non-lactating mammalian female including woman<sup>1</sup>. The effect of extract on non-lactating mammary gland after seven and fourteen days was observed on non-lactating mammary gland showed small size mammary gland with no secretion. After 7 days the epithelial lining showed growth and increasing size of secretory glands. Ducts were also seen increasing a proliferation. After 14 days secretory gland showed more tortuous structure and secretion was accumulated in to lumen and gland. The 14 days treated female rat mammary gland showed more secretory activity indicating lactation was induced in lactating gland of mammary gland.

Key Words: albino rat, Phytochemical, Gangotri species, Ageratum conyzoides

**INTRODUCTION:**

In Maharashtra Ageratum conyzoides species known with local name Gangotri species. A plant is annual 1 to 3 feet high; stem is erect branched, hairy. Leaves opposite, flowers pale blue or white malodorous<sup>1</sup>; Phytochemical investigations<sup>2</sup> carried out by various research groups on the species Ageratum conyzoides showed presence of a number of chemical constituent's viz. flavonoides, Benzfurans and chromens. In addition to that, a number of terpenoids, steroids, phytosterols and other miscellaneous constituents have been reported in this plant. Some important phytosterols are Brassicasterol, dihydrobrassicasterol, Dihydrotspinasterol, friedelin, sitosterol, spinasterolstigmasterol Adesogan and] The plant has great medicinal history first report antigivenile hormonal activity of precedence - I and precedence - II<sup>4</sup>.

Information collected from domestic Vaidu showed that the leaves of this plant given to non lactating human female after delivery showed induction of lactation to some extent hence in the present study the effect of leaf extract on white rat non lactating mammary gland was carried out<sup>2</sup>. The present study showed histological structure of milk glands in female of white rats indicated increase in secretory activity during 14 days of treatment<sup>5,6</sup>.

**APPLICATION:**

Fresh leaves or dried powder of Ageratum conyzoides can be used for induction of lactation in affected lactating dairy animals and even human females.

**MATERIALS AND METHODS:****1) Materials:**

Ethanol (100%), extract of leaves of plant species Ageratum conyzoides was used<sup>4,5</sup>.

**2) Extraction:**

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The collected leaves were dried at room temperature under shade; and powdered. This powder was deep 100% ethanol for 72 hrs. And crude extract was obtained by filtration and Evaporation<sup>3</sup>.

**3) Dose preparation and administration:**

The crude drug extract was suspended into sterile water and administered (80 mg/Kg) daily for 2 weeks.

**4) Selection of animal:**

Mature Healthy non-lactating female albino rats 6 to 8 month old were procured from animal house of Krishna Institute of Medical Science [K.I.M.S.] Karad, Malkapur. Weighing  $170 \pm 30$  gm. They were maintained under controlled environment ( $25 \pm 2^\circ\text{C}$ ) and provided standard animal food pellet [Ratan brother's laboratory animal feed, India] and water ad libitum

**RESULT AND DISCUSSION:**

Fig. 1 to 5 in photo plate represents histological section of mammary gland of white rat under gone treatments of leaf extract of Ageratum conyzoides.

Fig. 1 Histological structure of mammary gland of control showed small size milk gland with dwarf epithelial lining, the lumen of milk gland without any secretion. Ground tissue showed fibrous connective tissue and smooth muscles compactly arranged.

Fig. 2 and 3 represent sections of mammary glands treated with leaf extract for seven days in general there seems to be increase in the epithelial lining to the milk glands this increase was more evident in the ducts of secretory gland. The milk gland cells showed secretory activity at certain cells there was increase in number of milk gland. Lumens did not show any secretion.

Fig. 4 and 5 showed increasing in secretary activity of milk gland cells showing milk glands have become enlarged and filled with the secretion. Also lumen fills with secretions

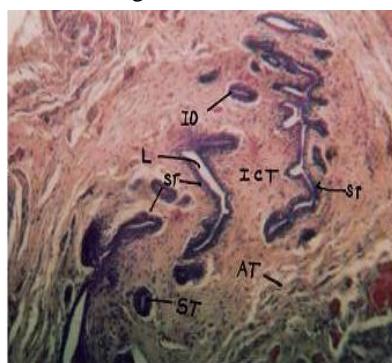


Fig No. 1



Fig No. 2



Fig No. 3



Fig No. 4

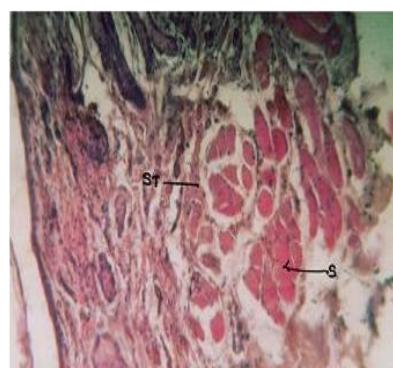


Fig No. 5

Fig No. 1 - T.S. of control non lactating mammary gland

Fig No. 2 - T.S. of treated non lactating mammary gland.

Fig No. 3 - T.S. of treated non lactating mammary gland

Fig No. 4 - T.S. of treated non lactating mammary gland.

Fig No. 5 - T.S. of treated non lactating mammary gland.

#### Observation of Figures:

Fig. 1 to 5 is Hematoxyline-eosine stained sections of non lactating mammary gland X 100

#### Group-1. Normal:

Fig No. 1 - T.S. of control non lactating mammary gland.

S.T. – Secretory tubules, L – Lumen

I.C.T. – Interlobular loose connective tissue.

A.T. – Adipose tissue

#### Group-2. Seven days treatment:

Fig No. 2 – T.S. of treated non lactating mammary gland.

S.T. – Secretory tubules, L – Lumen

Fig No. 3 - T.S. of treated non lactating mammary gland.

S.T. – Secretory Tubules

#### Group-3. Fourteen days treatment:

Fig No. 4 - T.S. of treated non lactating mammary gland.

S. – Secretion

Fig No. 5 - T.S. of treated non lactating mammary gland.

S.T. – Secretary Tubules, S. – Secretion

#### CONCLUSION:

Leaf extract of Ageratum conyzoides acted on milk secretary cells of non-lactating milk glands of white rat female after 7 days, and there was significant increase in milk secretary activity after 14 days.

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