

REVIEW ARTICLE

Loranthus Europaeus is an Alternative Medicine in Treatment of Cyst and Mouth Inflammation Resulted from Chemotherapy of Breast Cancer

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ABSTRACT

The natural product continues to be important as a source of novel drugs because these drugs do not need a sophisticated instrument, cheap resources, less toxic, no resistance to them by bacteria compared with the synthetic drugs. However, the natural product will continue to be important in addition in three areas of discovery, they are a target for production by biotechnology, as source of new lead compounds of a novel chemical structure and as the active ingredients of useful treatments divided from traditional systems of folkloric medicine.¹ The herb *Loranthus Europaeus* leaves, and fruits were used in Iraq traditional medicine for the treatment of inflammation, tumor, and antimicrobial infection.² For these reasons, we tried to use the phytochemical and pharmacological studies to approach to their bioactive products as a new source for medicine. The extraction of an active constituent of *Loranthus Europaeus* (flavonoids terpenoids and alkaloids) by using chromatography method using a thimble of suxlet with different organic solvents. The ethyl acetate extract contain flavonoid, which contains quercetin and quercitrin. The active ingredient mixture of L.E. leaves extract have used as a mouth wash for female patient different age have breast cancer and under treatment with chemotherapy. We found that the bioactive martial extracted from L.E. used as mouth wash cause the cure of the inflammation of the mouth of those ladies. In addition that humans of different sexes complaining of cyst attached to one of their tooth treated with different types of antibiotic there was no response but when have given an antibiotic with bioactive agents of this L.E. there was complete cure of the cyst and there was no need for operation which give the possibility of presence of one or more of these (quercetin and quercitrin) active agents act as positive Nanocarrier of the antibiotic to the cyst directly and cure it.

Keywords: Healing, Immunomodulators, Inflammation, *Loranthus Europaeus*, Quercetin, Quercitrin.

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INTRODUCTION

Oral ulcers classified into acute (short term) or chronic (long term). The acute persist no more than three weeks and regress spontaneously, such as traumatic ulcers, aphthous ulcers, herpetic ulcers, and chancres. Chronic ulcers persist for weeks and months, such as major aphthous ulcers from odontogenic infection, malignant ulcers, gummas, ulcers secondary to debilitating systemic disease, and some traumatic ulcers with persistent traumatic elements.¹⁰ On other hand Human immunodeficiency can cause a variety of oral ulcers which are painful and can cause dysphagia which appear in treatment of chemotherapy in case of treatment of removal of breast which infected by cancer.¹¹ On the other hand, the epidermoid and dermoid system in the oral cavity are relatively uncommon

lesions of development origin, these cysts should be removed by surgery⁽³⁾ in case of cyst and ulcer; there is no cure treatment so this a good field to search for new medication. The natural product will continue to be important and a good areas for discovery they are target for production by biotechnology as a source of new lead of compounds of novel chemical structure from traditional system of folkloric medicine⁽⁴⁾ the herb *Loranthus Europaeus* leaves and fruits was used in Iraq traditional medicine for the treatment of inflammation, tumor and antimicrobial infection ⁽⁵⁾ for these reasons we tried to use the phytochemical and pharmacological studies to approach to their bioactive products as a new source of a new medications applying Nanotechnology and Dentistry as a new tool of treatment ⁽⁶⁾. Figure 1 shows a typical picture of *Loranthus Europaeus* plant.

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Figure 1: Shows a typical picture of Loranthus Europaeus plant.

METHOD AND RESULT A

Phytochemical method

Extraction of the active ingredient of Loranthus Europaeus: We have taken 500 grams of dried leaves of Loranthus Europaeus and follow the following schematic diagram for preparation of Loranthus Europaeus extract and fraction of its methanol preparation. Figure 3 shows the extraction of (flavonoids) from Loranthus E. leaves extract by using chromatography method with different organic solvents 1tol ratio.

This ratio used because we used HPLC (liquid/liquid) chromatography method. The ethyl acetate extract contains flavonoid which contains quercetin and quercitrin after the quantitative and measurement of molecular and structural elucidation foundation, as shown in Table 1.

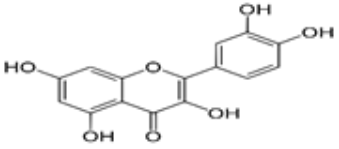
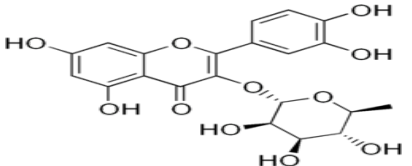
The active ingredient mixture (querciting and quercitrin) (10mg/100mL) of distilled water solvent used as a mouth wash.

Also, capsules size two zero prepared from quercetin and quercitrin 10 mg of each plus lactose 100mg. These bioactive material capsules were given to patients complaining from a cyst and ulcers. Twice daily for 7 days.

METHODS AND RESULTS B (A)

A group of patients complaining from cystic mass in the oral cavity here 3 of the patient cured by treating them with antibiotic + bioactive capsule of Loranthus E. +flagyl. Four patients resist to drug so after a week of mixed treatment, surgical removal of the cyst + drug mixture complete curation after 15 days. Two patients need surgical removal with antibiotics alone cured after two weeks of treatment. However in one of the patient, there was a resistant to the treatment as in Figure 4, which shows the cyst a: before treatment, b: with surgical removal and treatment in this case we gave to the patent in addition to the quercetin complex an antibiotic

Table 1: This table shows the quantities of active Flavonoid ingredient of L.E. Extract.

Flavonoid	% w/w	4.2g	flavonoid	+ other mono-oligo-meric phenolic compounds
quercetin	%w/w	1.5g	Chemical formula $C_{15}H_{10}O_7$	
quercitrin	%w/w	1.3g	Chemical formula $C_{21}H_{20}O_{11}$	

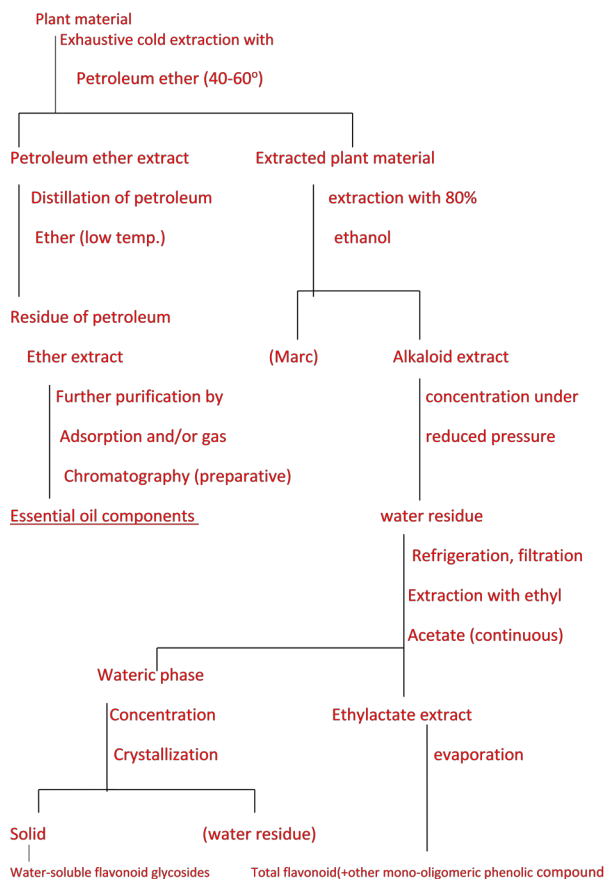


Figure 3: Shows separation of flavonoids.

(gentamycin 7mg/kg) + flagyl then in the 14th day we found complete cure as c in the figure.

B (b) Oral ulcer

Ten women infected by breast cancer under treatment of chemotherapy after surgical removal of their breast from 1 day to one week. We have to look for ulcer mucositis, which is the main common in the oral region and as indicators of inflammation. Table 2 shows the mean ± standard deviation of the width and length of the largest ulcer in each case and time of cure in days after washing of their mouth 1x3 times by the bioactive Loranthus E. mouth wash and bioactive capsule treatment.

DISCUSSION

Natural products still a bank of new drug resources for the following reasons: these are as target for production by biotechnology. Also, they are as a source of new lead compounds of novel chemical structure which act as a tool for the invention of a new drug using nanoscience in medicine, the third reason as active ingredients of useful treatment divided from a traditional system of medicine.⁷ The drugs that manufacturing from bioactive materials are cheap because of their available resources with high activity not polluted because the medicinal plant depends on the floor and sunlight.

Table 2: This table shows the mean value ± standard deviation of ulcers and the period of treatment and healing

No of ulcers	mm width	mm Length	Days of treatment
20	Mean ± S.D. 7 ± 2	Mean ± S.D. 12 ± 4	5-7 days

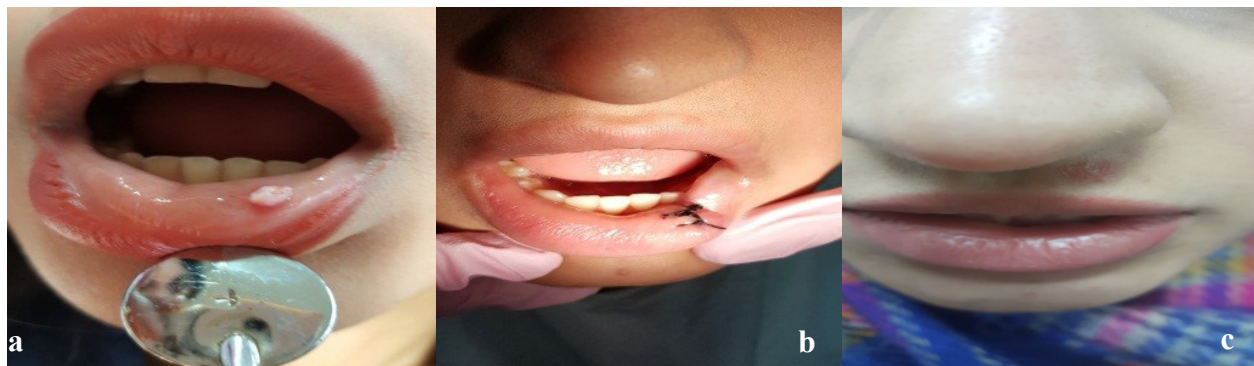


Figure 4: This typical picture of female 22 year's age has lower lip irritant fibrous cyst, (a) before, (b) surgical removal (c)

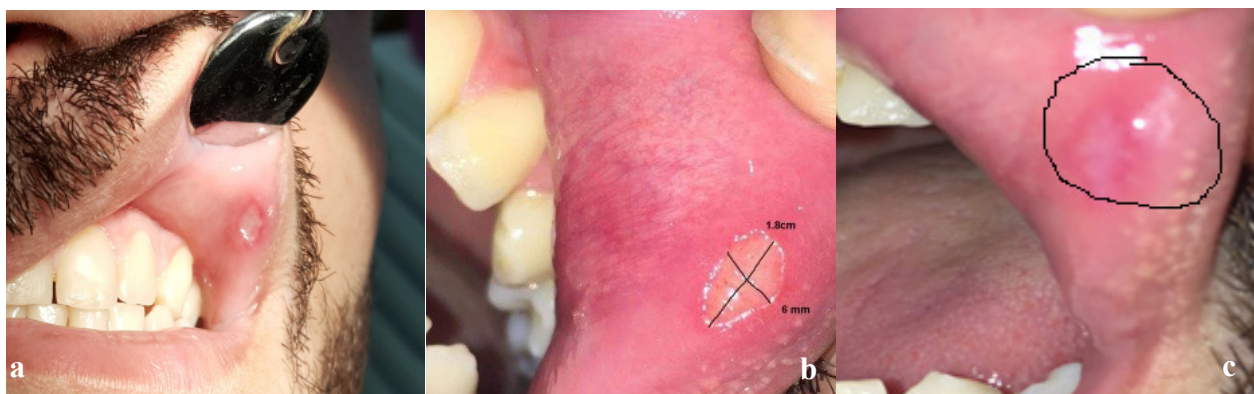
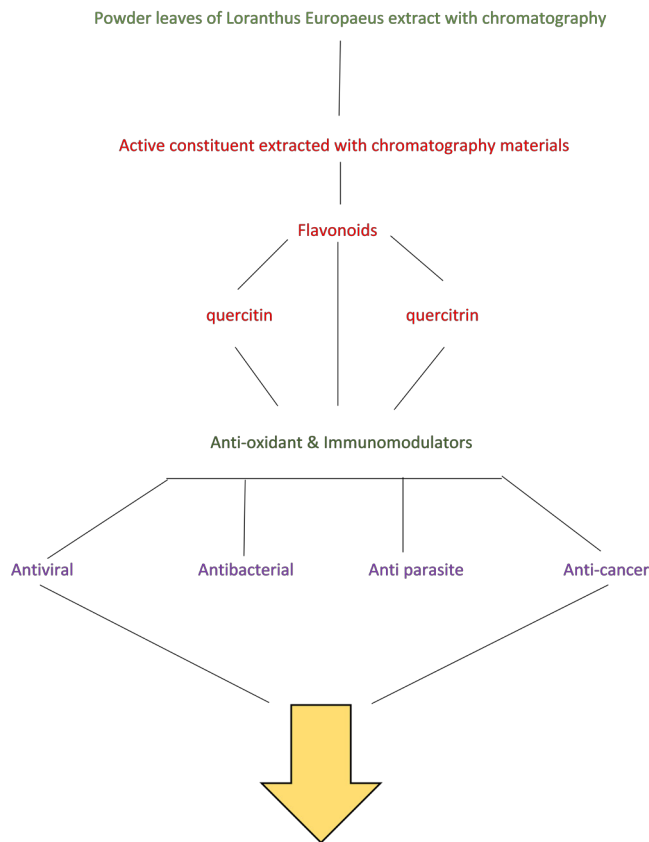


Figure 5: male 25 years has upper lip Aphthus with dimension 1.8 cm X 6mm a, before b, during c, after use capsule. Ulcer picture (a) shows ulcer an aphthous because he is used chemotherapy treatment. (b) Shows after a day of treatment with mouth wash the healing is clear (c) shows complete recover



Effective therapy of *Loranthus Europaeus* bioactive materials

Image of (summary of phytochemical study and isolation of bioactive agent of L.E. extract

Not need a new coast sophisticated instrument. Bacteria viral and infected cell nuclei use in cancer cannot make resistant to such drugs. They are safe drugs with less toxicity than synthetic drugs. In addition, they have a high activity to word the disease. *Loranthus Europaeus* medicinal plant traditionally applications include wound healing, gastrointestinal, antiviral, and anticancer therapy (5). In this research, we found a reasonable quantity of flavonoids (quercetin and quercitrin) active constituent after extraction, identification, and structural elucidation. The effect of this new medication from these bioactive materials has shown wound healing of incision in a case of surgical removal of a cyst. Besides, they have addition antibiotic activity in curing oral ulcers if used with an antibiotic for a patient who under chemotherapy in the treatment of cancer breast. This could be dependent on the additional effect of flavonoids as antioxidant, and the direct effect of quercetin and quercitrin have a direct effect on the ulcer tissue inflammation that affecting as a result of their effect as an active nanocarrier to the antibiotic. In addition to their effect on increasing the immunity so potential their impact as antiviral antiparasite, antimicrobial and anticancer. (6), (8-11) So the following image summaries the effect of bioactive ingredients in curing the power of cyst and oral ulcers.

CONCLUSION

The active ingredient mixture of leaves extraction have used as mouth wash, and encapsulated drug for patient of different ages ladies have breast cancer and under-treatment of chemotherapy we found that the bioactive materials extracted and identified from L.E. used as mouth wash and medications these cause cure of pain and inflammation of oral cavity ulcer and aphthous of these ladies. In addition, the cyst of patients complaining of oral cavity cyst treated with medication of bioactive ingredient of L.E. extract reduced the ordinary periods of cyst cure we found this medication potentiated the effect of antibiotic and also did alone decreasing period of healing which may be that quercetin and quercitrin act in addition to their direct effect act as ideal nanocarrier for the antibiotic.

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