

A Dataset about Orthopedics Cast, Harnessing Conventional Approach and Decoctions From Therapeutic Plants

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ABSTRACT

The growing field of herbal medicine has shown a lot of promise for the nearly 3500 different medicinal plants found in the Indian subcontinent. The potential of the medicinal plants has drawn a great deal of attention. Thus research on plants the isolation of active molecules and the discoveries made in phytomedicine are major areas of focus in the modern world. Numerous works of Indian science support herbal medicine and its mode of action through they may not be scientific evidence. Thus the gathered data could provide some inspiration for the research project concerning *CISSUS QUADRANGULARIS* and *MOMODICA CHARANTIA* seeds that this review addressed. Thus the research plant indicates that fracture healing is a sophisticated physiological process. Integrated sequences of biological events result in a fracture, which is defined as a complete or partial separation in the continuity of bone fractures. One of the challenges of the contemporary period is the repair of bone defects caused by trauma, tumors, osteitis, delayed unions, non unions, osteotomy, Arthrodesis and complex fractures. In developing nations conventional herbal healthcare is still used by an estimated 80% of the population. People who lived and work in close relationship with their surroundings, regardless of social status, practice healing. Globally exists currently a glowing interest in alternative forms of therapy. Currently in demand herbal medicine are becoming more and more popular as a result of research employing innovative scientific methods and contemporary scientific approaches. The subsequent articles will focus on its advancement and utilization in view of current scientific techniques performed as they pertain to these plants.

Keywords: CISSUS QUADRANGULARIS, MOMODICA CHARANTIA, bone fracture, cost effective, plaster cast, hot suit.

I. INTRODUCTION

Though modern techniques are centuries old, the medicinal plants have been helping with bone healing for thousands of years. The bone can heal itself by a physiological and proliferative process assisted by its own body when it comes to an illness. The procedure for bone healing involves the division and proliferation of tissues and cells. Injectable medicinal products for accelerated bone recovery are not available at this time. However, it is believed that ingredients in conjunction to promote rapid healing of bone fractures are present in a number of herbal remedies used by folk medicine for the improvement of weak, brittle, low density and fractured bones. Modern medical practice generally involves immobilising the cleavage bone with a plaster or a cast to treat bone fractures. *CISSUS QUADRANGULARIS* is an annual vine belonging to the grape family. It's often referred to as "veldt grape", a winged tribune or an adamant creeper. The plant *CISSUS QUADRANGULARIS*, which grows in India and helps increase the healing process of broken bones, has been used as an herbal medicine since ancient times. Fracture of the jaw bone requires a reasonable length of time to heal. The effect of *cissusquadrangularis* may include antioxidant, pain relief and ant oxidative effects. It may also have a stimulating effect on bone growth. For many years, extract and powder *CISSUS QUADRANGULARIS* have been used to promote bone and tissue healing, as an analgesic, to treat infections, as an anabolic, and to promote weight loss and weight management. The *CISSUS* extracts have been isolated and identified with a large number of chemical constituents such as steroids, flavonoids, stilbene, Iridoids, triterpenes and gallic acid derivatives. The bitter melon, *MOMORDICA CHARANDIA*, is a vegetable that has been found in the tropics. Along with other non-specific bioactive ingredients like antioxidants, it contains compounds including vicine, polypeptide-p, and charantin that have anti-diabetic qualities. The metabolic and hypoglycemia effects of bitter melon extracts have been demonstrated in studies on human beings, animals or cell cultures. In particular, bitterness melon contains a rich vitamin C that is essential for the prevention of infections, bone formation and wound healing. For those who have increased cholesterol and hypercholesterolemia the benefits are to be found in bitter melon and *CISSUS QUADRANGULARIS*. Because of their antihyperlipidemic property. These two herbs have a very specific chemical composition and they are extremely vital for bone regeneration, owing to their remarkable ability to reduce swelling, inflammation, soreness or stimulate quick healing of the bones.

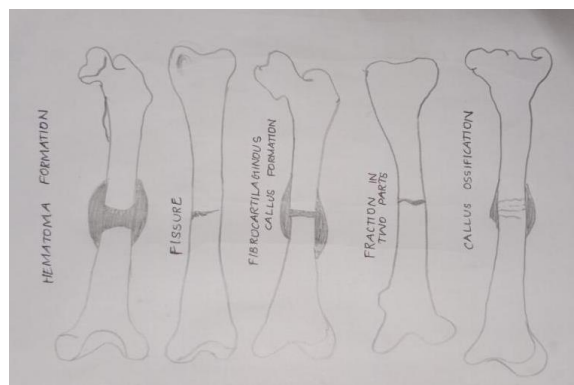


Figure1. Types of bone fracture

We have established through the examine that these types (Fissure, Fractured in Two parts, Hematoma formation, Fibrocartilaginous callus formation, Callus ossification) are applicable or this type of Orthopaedic cast. This type of fracture appropriate to exploration with the following materials and methods, it gives ethical matter of course.

II. SCIENTIFIC CLASSIFICATION

CISSUS QUADRANGULARIS (VELDT GRAPE)



Figure2. CISSUS QUADRANGULARIS

Kingdom: *PLANTAE*

Family : *VITACEAE*

Genus : *CISSUS*

Class : *ROSIDS*

Division : *TRACHOPHYTA*

Species : *CISSUS QUADRANGULARIS L.*

MOMORDICA CHARANTIA (Bitter melon)

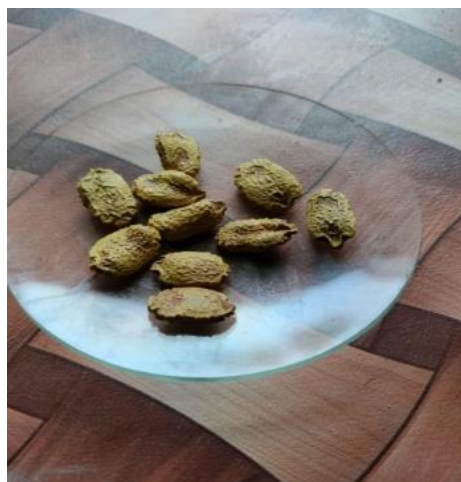


Figure3. MOMORDICA CHARANTIA

Kingdom : *PLANTAE*
 Family : *CUCURBITACCAE*
 Genus : *MOMORDICA*
 Class : *EUDICOTS*
 Division : *MAGNOLIOSIDA*
 Species : *CHARANDIA*

III. PRELIMINARY PHYTOCHEMICAL ANALYSIS

The crude extract obtained from the both plants {*CISSUS QUADRANGULARIS* (C.Q) and *MOMORDICACHARANTIA* (M.C)} is subjected to qualitative test for the identification of plant constituents such as steroids, reducing sugar, alkaloids, tannins. The result are presented in following table

TABLE I. PHYTOCHEMICAL ANALYSIS

| COMPOUNDS | PETROLEUM ETHER | | CHLOROFORM | | ETHANOL | |
|------------|-----------------|-----|------------|-----|---------|-----|
| | C.Q | M.C | C.Q | M.C | C.Q | M.C |
| ALKALOIDS | + | - | - | + | + | - |
| TANNINS | - | - | + | - | + | + |
| FLAVONOIDS | + | + | + | + | + | + |
| SAPONINS | + | + | - | + | - | - |
| STEROIDS | + | - | + | + | + | + |

IV. MATERIALS AND METHODS

4.1 METHANOL DISTILLATION

Methanol has been generally found to be more efficient in extraction of lower molecular weight polyphenols. The dried leaves were coarsely powdered using a mortar. To begin the process carefully measure 10 grams both plant powder(*CISSUS QUADRANGULARIS* and *MOMORDICACHARANTIA*) put in a clean 250 ml beaker to get underway the process. After the beaker is over flowing powdered plant was macerated in 80% methanol to obtain the hydro alcoholic crude extract using beaker at room temperature and abandon in position for one to two hours. The resultant mixture is filtered through filter paper to remove any harmful substance and also the best antioxidant capacity, after an agreed upon period of time. Which consists of methanol is utilized for the subsequent phytochemical analysis.

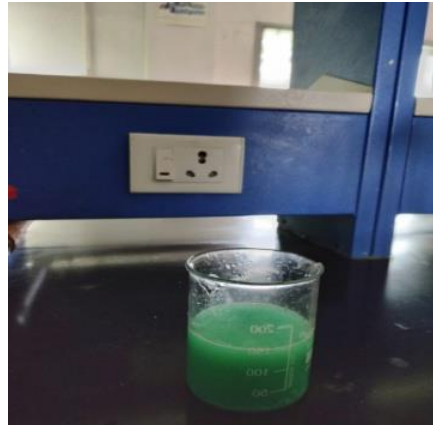


Figure4. Methanol extraction

4.2 ORTHOPEDICS PLASTER (CAST and SLAB) PASTE METHOD

Treatment of osteoporosis and arthritis with *Cissus quadrangularis* has been documented in Ayurveda. After using some clean water or disinfectant, extract some bitter guard seeds (*MOMORDICACHARANTIA*) and veldt grape (*Cissus QUANDRAGULARIS*). Let it dry out naturally for a few days in a row at room temperature. After combining equal amounts of these, grind them with a little rain water establishing a paste that has a good consistency. The active compounds in this paste can help to heal the fractured bone, so we can apply it there and leave it there for four to five hours.



Figure 5. Grinding process



Figure6. Dried Powder (both plants)

In this we have two types of method in bone fracture, and it is one **cast** method and another **slab** method.

The slab method is a post fracture method where a partial or 90 degree because immediately after fracture there is swelling at the place. so the first step is to apply the slab method to the reducing swelling. And another one is, Cost method is the method that comes after the slab method. Cast method of plaster of casting is fracture site at 360 degree or entire part is covered with the composite.

With the help of its monosaccharide, collagen, phosphorous calcium, and other supplies, *C. QUANDRAGULARIS* reinforces the structure of the skeleton. Moreover, it has been linked to the early elimination of mucopolysaccharides from the fractured region. Applying this paste a couple of times or a week can yield better results. These active compounds result in negligible tissue reaction in the fractured area, allowing for optimal early stage decalcification with little callus formation. Consequently, there is enough calcium accumulated to fuse two fractured bone segments, which is why the reconstruction procedure requires considerably fewer time. Since that it's a traditional method, there are no negative consequences. The inflammation brought on by the bone fracture is also reduced by using this paste. Additional impact is exerted on osteoblastic proliferation by the cells found in these. The anti-anabolic effects of steroids, like cortisone, on the healing of fractures are mitigated by *C. QUANDRAGULARIS*. This shortens the typical healing period for fractures from 14 to 16 weeks to 8 to 10 weeks. When the aforementioned assets are put to work decisively, the healing process will be completed



Figure7. Orthopedic Plaster cast paste

4.3 DAUB HOTSUIT ON SWELL METHOD

In order to mend a broken bone, the same amount of *MOMORDICA CHARANTIA* and *Cissus QUADRANGULARIS* should be used, and they should be thoroughly cleaned to get rid of any contaminants. It should then be left to cure at room temperature. Use a mortar and pestle to crush these plants, and after the mixture is done, bake it in a porcelain bowl for three minutes before stirring it. Then, to prevent the substance from evaporating and thus maintaining heat, transfer a heated container of powdered compound into masculine fabric in its hot state and tie it tight.

Keep the hot condition cloth pack on the fractured places of bones. Mainly to warm up the broken bone, Cissus instant with vitamin C and vitamin A that have been shown to stimulate collagen formation which can be heated by these very active compounds.



Figure 8. Dry roast process

The results of radiological and clinical observations indicated that there was an incidence of c. These plants suffer from a reduction in healing time of fractures. Inhibition of tissue regeneration and repair and retarding formation of the specific skeletal at antianabolic effects of cortisone. In addition, it can be useful for jointing tiny bones. One of the most effective advantages which are present during this process is its ability to inhibit inflammation caused by a fracture. Therefore on reducing inflammation we can heal the fractured bone easily. We can do this while it is hot condition only. When the heat preset in it reduced slowly it became inactive because both have a build up the skeletal of the fractured bone namely its muco polysaccharides, collagen, phosphorus, calcium. And raw materials for bone healing are supplied by monopolysaccharide. The completion of the healing process will require rapid use of these raw materials. So we can dry roast it when needed it become active again and then it is ready to use. Moreover the compound is active only by 3-4times of dry roasted only .on based on usage we can prepare a new one from both plants and follow the process again. Until the fracture is completely healed, we can do this again.



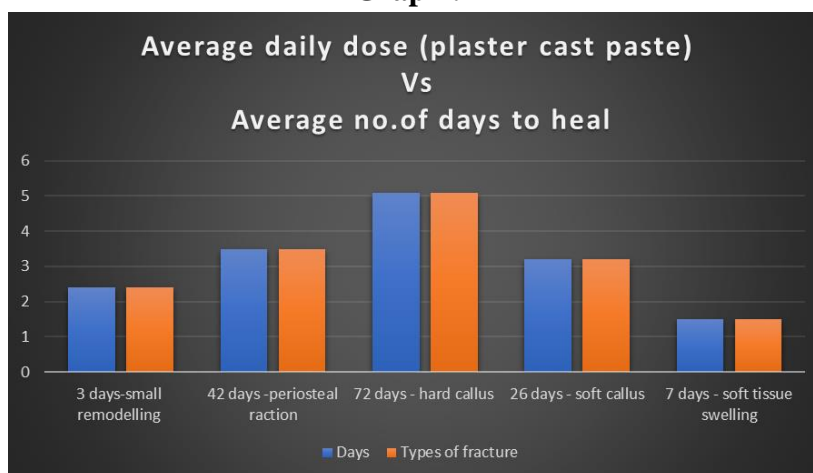
Figure 9. Daub hotpack process

It is free from undesirable effects such as skin disturbances, rash and allergic reactions caused by the presence of a reaction with muscle. It does not cause toxicity in hot clothing. An elevation in serum calcium and sigma phosphorus levels should be attributed to the administration of c. Because o its effectiveness and safely for human usage, this traditional approach has gained a lot attention lately.

V.RESULT AND DISSUCUSSION

Popularly known as “the silent disease” since early symptoms are usually absent, healing causes progressbone loss, which renders the bones susceptible to fractures. Bone fracture healing is a complex process consisting of four overlapping phases—hematoma formation, inflammation, repair, and remodelling.

Graph .1



Healing Time is dependent on many factors: Types of fracture, age, medical condition, Nutrition, treatment plan, compliance of patient.

The traditional use of natural products in bone fractures means that phytochemical can be developed as potential therapy for reducing fracture healing period. Fracture of a bone can occur at any time to anybody, due to a bad fall or by accident. In any case, it needs to be examined right away. It is hoped that many bone disease processes that are secondary to herbal medicine associated with bone resection due to ablative surgery, ageing, and metabolic or inherited skeletal disorders will be successfully cured with novel bone-building protocols that are that may address both local and systemic enhancement to optimize outcome.

Research is ongoing in all relevant fields. It is estimated that 80% of people in developing nations still receive their primary care from traditional medicine, which mostly uses creatures and plants. There is currently a demand for herbal medicines, and this demand is growing daily. In the international market, its prospects are also better. According to estimates, the market for ayurvedic medications is growing by 20% a year. Broken bones have historically been treated with bitter guard seeds and the *Cissus QUADRANGULARIS* plant in Ayurvedic medicine. While bone healing is a physiological and spontaneous process, it can be accelerated to return to normal function and promote regeneration with intervention and setting up the right conditions. In Ayurvedic medicine, bitter guard seeds and the *Cissus QUANDRANGUARIS* plant have long been used to treat broken bones. Although bone healing is a physiological and spontaneous process,

with the right support and conditions, it can be expedited to support regeneration and return to normal function. By offering a preliminary decision support system, this work attempts to assist researchers in creating models that can automatically detect and classify fractures in human bones. Depending on the type of bone ailment, these barks have been used in traditional fracture bone healing methods as an extract, poultice, food supplement, or in conjunction with a splint instead of a cast to immobilize the fractured bone.

VI. CONCLUSION

In conclusion, bone fractures should be taken with the utmost caution. Due to the disease's dormant nature, it can be challenging to identify symptoms prior to fracture. One could think of natural products as an health heritage from Mother Nature. Thus, in order to develop a different and more potent treatment for patients with bone fractures, more thorough research into the therapeutic qualities of various kinds of medicinal plants should be done. The plants' androgen-like and antioxidant qualities play a significant role in accelerating the healing of bone fractures. These effects might be connected to the extracts' anti-inflammatory and antioxidant properties. Therefore, in order to improve study analysis and enable the reproducibility of subsequent trials, more thorough methodological descriptions need to be fulfilled. In order to help chemists in commercial synthesizing and investigate different synthetic analogues as bone menders, which will provide another source of Therapeutics; researchers are actively looking for a more potent moiety and phytochemical analysis of additional botanicals used in traditional to speed up bone mending. The purpose of this study is to provide scientific evidence for the use of polyherba in the treatment of fractures and the use of locally available natural resources, which can be cost-effective. The world community could benefit from these activities by obtaining regional information.

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