

**THE IMPLEMENTATION OF THE MOXA-PAD CAUTERIZER
FOR KNEE ARTHRALGIA**

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Abstract: We have suggested the moxa-pad cauterizer especially for knee arthralgia. We have researched the variation on knee heat generating by the moxa-pad moxibustion cauterizer.

The experimental demonstrations have been made by the stimulating the spots which are G-34(Gall-bladder Meridian 34), Sp-9(Spleen Meridian 9), and Liv-3(Liver Meridian 3) acupuncture points. And stimulating time was one hour with moxa-pad cauterizer.

Keywords: moxa, moxibustion, cauterizer, knee arthralgia.

1. INTRODUCTION

The moxibustion therapy is one of the most important treatments in the oriental medicine. Many diseases have been gotten well by improvement of circulation of the blood due to pharmacological and the thermal effects of moxibustion therapy.

The moxa therapy has 2 effects : One is a pharmacological effect of the moxa's vasodilator, the other is the betterment of the blood circulation by the moxibustion therapy.

But the moxibustion therapy has the burnt, fiery, insanitary problems in performing the operation.

In order to get rid of the problems we have suggested the moxa-pad moxibustion cauterizer especially for knee arthralgia.

2. MATERIALS and METHODS

2.1 Moxa-extract essence

Moxa-extract lotion has made up moxa and solvent handing process. And the moxa-essence has contained to a herb medicine.

Moxa-extract lotion of pharmacy has the following process.

At first moxa methanol is made from moxa and methanol.

At second moxa-CH₂CL₂ and moxa-EtOAc are fractionated from the moxa methanol.

At this time, moxa-CH₂CL₂ of ingredient has included vasodilator, and moxa-EtOAc of ingredient has antioxidant.

At third moxa-extract essence made up a mixture to moxa-CH₂CL₂ and moxa-EtOAc .

The moxa-pad is made up with the moxa essence and thermo transmit pad or pad of button on-off type.

Therefore, moxa-pad is consisted with the essential oils of the vasodilator effect and of the flavonoid compounds with antioxidant effect.

Fig.1 has showed the methods of making the moxa-essence.

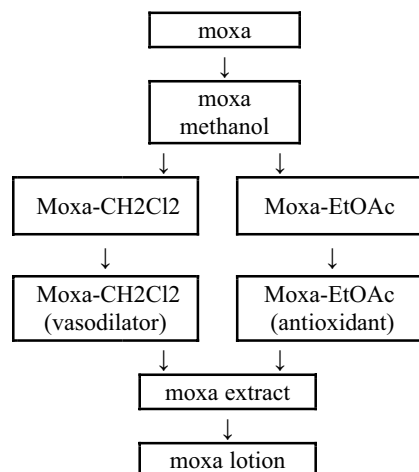


Fig.1 The flowchart for the methods of making the moxa-essence

2.2 moxa-pad moxibustion cauterizer with the single heating-part

The moxa-pad moxibustion cauterizer has been constructed with a DC power supply (5 ~ 15[V] variable voltage) and thermo-transmit part.

The thermo-generating part has used the PTC which is (Ba_{0.8} Sr_{0.2})_{0.996} Y_{0.004} TiO₃ + 0.5_{WT} SiO₂%, wide Φ12mm, thickness 1.1mm ling type.

A single heating pad is consisted with the PTC(Positive Temperature Coefficients) ceramic heaters, contact part of button type.

Fig. 2 is the characteristic graph of the PTC which is (Ba_{0.8} Sr_{0.2})_{0.996} Y_{0.004} TiO₃ + 0.5_{WT} SiO₂%, wide Φ12mm, thickness 1.1mm ling type ceramic heater in the single heating-pad.

The PTC ceramic heater shows small temperature variation quantity for the varying boltage because of the positive temperature coefficient.

Therefore the PTC ceramic heater is safe in use of the moxibustion cauterizer

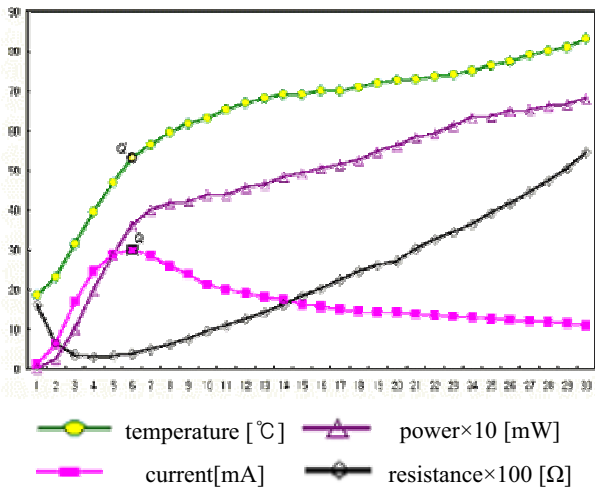


Fig.2 The characteristic graphs of the PTC ceramic heater

Fig. 3 is the schematic diagram of single heating-pad and moxa-pad.

The single heating-pad has designed for a spot surgical operation of body (spot on the body suitable for acupuncture point).

The single heating-pad is constructed with a PTC ceramic heater and contact part of button type for the accurate peration of spot on the body suitable for a acupuncture

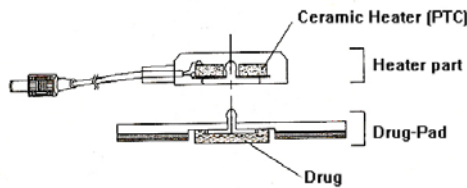


Fig.3 The schematic diagram of single heating-pad and moxa-pad

3. EXPERIMENT

The spot on the body suitable for G-34(Gall-bladder Meridian 34), Sp-9(Spleen Meridian 9), and Liv-3(Liver Meridian 3) acupuncture points have been treated frequently for the many knee arthralgia operation in the oriental needle-moxibustion therapy.

The experiment has been demonstrated with the moxa-pad moxibustion cauterizer that used on the spot on the body suitable for acupuncture.

The stimulating time was one hour with moxa-pad moxibustion cauterizer with the single heating-pad.

The body heat has been taken by the infrared thermography at a periodic time.

Fig. 4 shows the spot on the body suitable for the acupuncture points in oriental medicine.

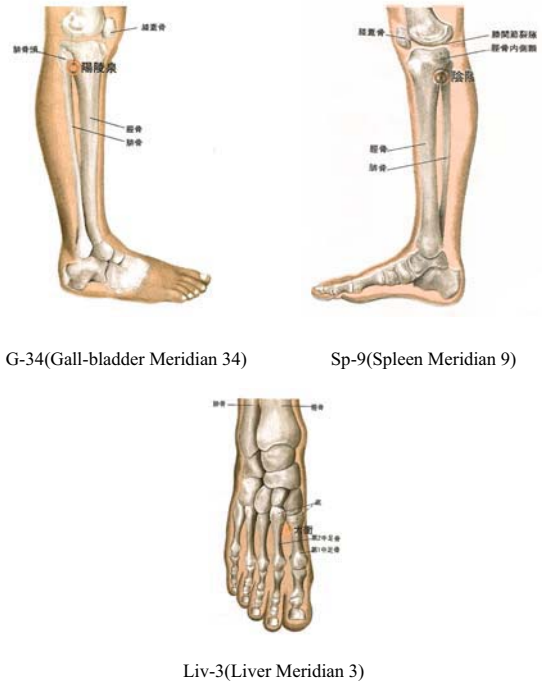


Fig.4 3 spots on the body suitable for the acupuncture points in this experiment

The experimental result has been demonstrated in Fig. 5.

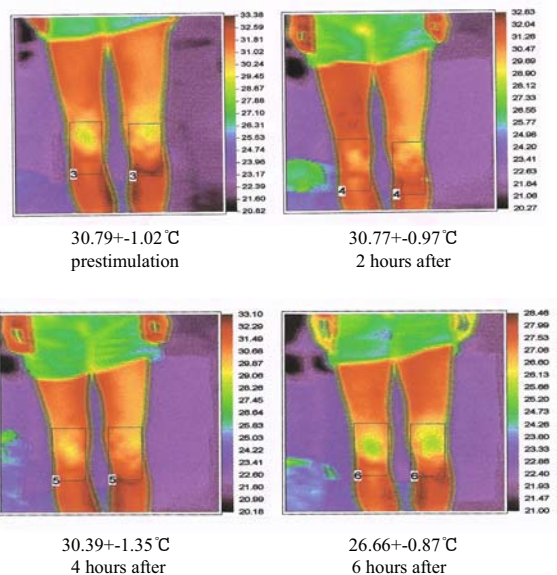


Fig.5 Thermograph of body heat of the subject (front knee)

Fig 6 shows the knee average temperature of body heat for the moxa-pad moxibustion cauterizer with the heating-pad stimulation.

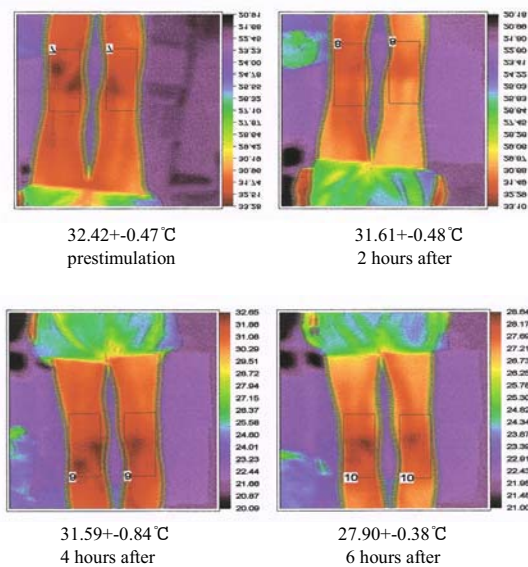


Fig.6 Thermograph of body heat of the subject (rear knee)

Fig.5 shows the average front knee heat thermographs prestimulation, just after stimulation, 2 hours after, 4 hours, and 6 hours after. The front knee average heat was same 2 hours after stimulation, and decreased by the 0.38°C 4 hours after, and decreased by the 4.1°C 6 hours after.

Fig.6 shows the average rear knee heat thermographs prestimulation, just after stimulation, 2 hours after, 4 hours, and 6 hours after. The rear knee average heat decreased by the 0.8°C 2 hours after stimulation, and decreased by the 0.8°C 4 hours after, and decreased by the 4.5°C 6 hours after.

The pharmacological effect of the moxa-pad, and the cure of the knee arthralgia have made the knee heat decreased.

4. CONCLUSIONS

We have proposed that the moxa-pad moxibustion cauterizer with the heating pad was effective in knee arthralgia by the pharmacological effect of the moxa-pad and by the betterment of the circulation of the blood.

The pharmacological effect of the moxa-pad, and the cure of the knee arthralgia have made the knee heat decreased.

5. REFERENCES

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