

Study of concept on menstrual disorders in myanmar traditional medical treatises

Daw Thin Sandar Hlaing

ABSTRACT

Menstrual disorders lead to major social and occupational disruption, as well as affect on psychological well-being, although rarely life threatening. It has speculated on the concept of aetiology, diagnosis and treatment concerning about menstrual disorders according to traditional medical treatises in Myanmar. It was described that the seven selected traditional medical treatises has been selected in core curriculum of Gynecology Department, University of Traditional Medicine. This descriptive analytical study deals with the concept on menstrual disorders in Myanmar traditional medical treatises and was conducted by the literature from July 2016 to September 2017. It was specifically synthesized the traditional view of definition, aetiology, cardinal signs and symptoms, pathogenesis, treatment and complications about *Raktapradara* (Menorrhagia), *Rajonasha*(Amenorrhoea), *Artavakshaya* (Oligomenorrhoea), *Udavarta* (Dysmnorrhoea), *Swetapradara*(Leucorrhoea). Therefore, it is believed that this literature review will provide the further researches about *Raktapradara*, *Rajonasha*, *Artavakshaya*, *Udavarta*, *Swetapradara* because of modernized on ancient concept about these disorders in different treatises.

Effectiveness Of Acupuncture Treatment On Patients With Sciatica

San Thidar Moe, WintTheingi, New New Yee, Wing Naing, Win Ko

ABSTRACT

The present study was undertaken to determine the effectiveness of Acupuncture Treatment on patients with sciatica admitted to Traditional Medicine Teaching Hospital, Mandalay. This study was conducted from 1st September 2016 to 31st October 2017 by hospital based quasi-experimental clinical design. A total of thirty subjects after obtaining informed consent from IPD in 100 bedded TMTH, Mandalay were selected according to signs and symptoms diagnosed as sciatic pain. Assessment with objective tests and subjective questions were carried out on patients with sciatica who were omitted for oral administrations for 21 days. If necessary, these patients were prescribed oral administration without analgesic activity. The subjects were performed in detailed procedure of Acupuncture treatment. The procedure of Acupuncture treatment was assigned for five consecutive days and the subject took a rest on every 7th day. This schedule was repeated for three times. The assessment of signs and symptoms were done on day0, day7, day14 and day21. Data resulting on signs and symptoms of patients with sciatica was analyzed with General Linear Model, pair t test by using SPSS software version 21. It was observed that the effectiveness of Acupuncture Treatment improved pricking pain was 88.5% ($p<0.000$), pulling pain was 89.7% ($p<0.000$), stiffness was 81.1% ($p<0.000$) and walking speed was 79% ($p<0.000$), SLR test (right side in degree) was 53.3% ($p<0.000$) and SLR test (left side in degree) was 42.7% ($p<0.000$), pain on Bragard's test was 80% ($p<0.000$), pain on Bowstringing sign was 83.3% ($p<0.000$), scoliosis was 65.6% ($p<0.000$) and pain on Flip test was 96.7% ($p<0.000$). Out of the 30 patients after completion of treatment, 11 patients (36.7%) were cured, 17 patients (56.7%) were marked improvement and 2 patients (6.7%) were mild improvement. None of the patient was found unchanged. These results suggest that Acupuncture treatment is effective and better improvement in subjective and objective signs and symptoms of sciatica by $p=0.000$. Therefore, highly significantly result was found on patients with sciatica. Based on the finding results, this study can be stated that there is serial improvement by providing Acupuncture Treatment in the management of patients with sciatica. It was clinically proved that acupuncture treatment can be used safely and effectively for patients with sciatica.

STUDY ON CONCEPT AND APPLICATION OF *TEJO* IN FORMULATION OF CLINICAL ASSESSMENT PATTERN

Thidar Oo¹, Sam Sam Htu¹, Than Ohn¹, Win Naing¹, Win Myint¹, Theim Kyaw¹

1. University of Traditional Medicine, Mandalay

ABSTRACT

This study was designated to assess the concept of *TejoDhatu* and its applicable formulation of clinical assessment pattern. According to descriptive study, literatures in relation to *Tejo* were reviewed and asked for some opinions from experienced Myanmar Traditional Medicine Physicians. Informations concerned with *TejoDhatu* were precisely collected from the treaties of *Desananaya*, *Ayurveda*, Western medicine and pure science are divided into three portions. First portion included concept of *Tejo* and the latter was widely stated as interior and exterior *Tejo* reviewed by *Ayurveda*, *Desananaya* and Modern science, followed by discussion about some facts in doubt. The last portion involved classification and organization of signs and symptoms due to aberration of *Tejo* and clinical assessment patterns formulated by inspection, palpation, percussion, auscultation and asking methods.

Keywords: CONCEPT AND APPLICATION OF *TEJO* IN FORMULATION OF CLINICAL ASSESSMENT PATTERN

Anti-Inflammatory Effect of Aqueous Extract of TMF-27 (*Pji-Loun:- Chan:-Tha-Hsei:*) On
Albino Mice

San San Htwe, Htin Aung Myo, Swe Swe, Mya Thidar Phyu, Thein Zaw Linn

ABSTRACT

This investigation was performed to find out whether the freeze dried powder of aqueous extract of TMF-27 possesses anti-inflammatory activity. The dried powder of TMF-27 was extracted with distilled water. In order to study the anti-inflammatory effect of freeze dried powder of aqueous extract of TMF-27, the experiment was carried out on albino mice of both sexes. Digital plethysmometer was used to measure the volume changes of the paw edema. Inflammation was induced by subplantar injection of 0.1 ml of 1% λ -carrageenan in right hind paw of albino mice. Anti-inflammatory effect of freeze dried powder of aqueous extract of TMF-27 was investigated by using 3 doses levels, i.e, 150 mg/kg, 300 mg/kg, 600 mg/kg respectively. Significant anti-inflammatory effect was started to show with the median dose of the aqueous extract 300 mg/kg at 6 hour ($p < 0.05$) and the high dose of 600 mg/kg started at 2 hour up to 6 hour ($p < 0.05$ to $p < 0.01$) after λ -carrageenan injection. The positive control group (aspirin, 300 mg/kg) was started to show at 2 hour and 3 hour ($p < 0.01$), 4 hour and 5 hour ($p < 0.001$), and 6 hour ($p < 0.01$). Phytochemical constituents of both extract and raw powder of TMF-27 were alkaloids, flavonoids, glycosides, phenolic compounds, polyphenol, terpenoids, saponins, reducing sugar, amino acid, carbohydrates, tannins and starch. Cyanogenic glycosides were not detected in both extract and raw powder of TMF 27. Physico-chemical properties of raw powder in moisture content was 4.52%; 1% pH solution and 10% pH solution were 6.87% and 6.56%. The total ash content, acid insoluble and water soluble ash were 7.14%, 1.4% and 95.28% and solubility in water and ethanol were 12.29% and 6.18% respectively. Physico-chemical properties of freeze dried powder of aqueous extract in moisture content was 4.59%; 1% pH solution and 10% pH solution were 6.34% and 6.42%. The total ash content, acid insoluble and water soluble ash were 10.95%, 1.75% and 95.5% and solubility in water and ethanol were 19.78% and 13.78% respectively. The result of this study supported that the freeze dried powder of aqueous extract of TMF-27 has potential anti-inflammatory effect and therefore it is possible to be used as anti-inflammatory drug in Myanmar Traditional Medicine.

ACUTE AND SUB-ACUTE TOXICITY OF *THWAY-ARR-TOE-HSEI*: (ASM-16) ON ALBINO RATS

Nang Aye Moe Khaing¹, Zin Mar Lwin¹, Khin Moe Aung², Win Yu Aung¹, Myintzu Tin Oung², Kyi Kyi Oo¹, Thin Lae Win¹

1. University of Traditional Medicine, Mandalay

2. Department of Medical Research (Pyin Oo Lwin Branch)

ABSTRACT

Thway-Arr-Toe-Hsei: (ASM-16) is one of the blood tonics. ASM-16 was composed of fifteen plants and one mineral, which is ferric ammonium citrate used as raw materials. This laboratory-based experimental study was done to investigate the safety profile of this drug during 1st September 2016 to 31st August 2017. The phytochemical and physico-chemical analysis of this drug was carried out at Research Division, University of Traditional Medicine, Mandalay. In phytochemical analysis, flavonoids, carbohydrates, glycosides, reducing sugars, tannins, amino acids, steroids, phenolic compounds and saponins were present. Physicochemical analysis of the formulation confirmed the quality and purity of this drug. Then, elemental compositions were analyzed by EDXRF at Department of Physics, University of Mandalay. Among 42 elements identified, the most component elements were potassium, chlorine and iron, calcium and phosphorus. Acute and sub-acute toxicity studies were done according to OECD test guidelines 425 and 407, respectively. Main test was performed by the dose of 175 mg/kg, 550 mg/kg, 2000 mg/kg, 2000 mg/kg and 2000 mg/kg using female of ICR strain mice. In sub-acute toxicity study, five groups of albino rats were Group I used control administrated distilled water, Group II used 500 mg/kg, Group III used 1000 mg/kg, Group IV used 2000 mg/kg and Group V used 2000 mg/kg as low, medium, high and satellite groups were investigated for 28 days. There were no abnormal histological features in all groups except mild congestion with mononuclear cells infiltration in high dose group. There were also no delayed effects in ASM-16 of satellite group. In conclusion, the test drug was found to be safe without untoward effect. Therefore, these findings may be the evidences of baseline data. And then, further study should be carried out the efficacy of this drug and clinical trial on healthy volunteers.

Comparative Study on Diuretic Activity of TMF-21 And Yang-Tejo-Nyein in Wistar Albino Rats

Khin Swe Maw¹, Aye Min Maw², Hla Myo Win², Lin Zaw Win², Thin Thin Toe², Kyi Kyi Oo²,
Theim Kyaw³

1. 100 Bedded Traditional Medicine Hospital, Nay Pyi Taw
2. University of Traditional Medicine
3. Department of Traditional Medicine

ABSTRACT

TMF-21 (*See-Say-Phyu*) and *Yang-Tejo-Nyein* (YTN) are commonly used as the diuretic drugs in Traditional Medicine Hospitals. TMF-21 was experimentally and clinically found that it had diuretic effect. YTN has been widely used as diuretic agent but no scientific report was available for its diuretic activity. Therefore, the diuretic activity of YTN was investigated by comparing with TMF-21 on Wistar albino rats in this study. This study was carried out in University of Traditional Medicine and Department of Medical Research (Pyin Oo Lwin Branch). This Randomized control experimental animal study took out from August 2016 to July 2017. In this study, animals were divided into six groups; two groups for TMF-21 (250 mg/kg and 500 mg/kg), two groups for YTN (125 mg/kg and 250 mg/kg), control group (25 mL/kg of 0.9% NaCl) and standard group (20 mg/kg of furosemide). Immediately after the administration of the test agents, the urine collection for 6 hours was done by using metabolic cage and then urinary sodium and potassium concentrations were measured by Atomic Absorption Spectrophotometer (AAS). According to the diuretic index, the low dose of TMF-21 had no diuretic effect but the high dose of TMF-21, the low and high doses of YTN had the diuretic effect because their diuretic indices were > 1 . Moreover, the actions for the high dose of TMF-21 and the two different doses of YTN were proved to have the diuretic effect because their mean urine output, urinary sodium and potassium concentrations were significantly increased when compared to normal control. Meanwhile, the diuretic action of the high dose of TMF-21 and two different doses of YTN were nearly as potent as standard, and hence, the high dose of YTN had more marked action on urinary potassium excretion than the standard drug furosemide. Not only the two different doses of YTN were comparable with the high dose of TMF-21 in the diuretic effect but also the urinary potassium excretion of YTN was greater than TMF-21. Therefore, this study supported the fact that YTN can be used as the diuretic agent at low dose but the high dose should be used with the precaution for hypokalemia.

Effect Of Acupuncture Therapy On Low Back Pain Due To Lumbar Spondylosis

Khin Nyein Chan Su, Su Mon Khaing, Win Naing, Nwe Nwe Yee, Maung Maung Thet

ABSTRACT

Low back pain is among top 10 diseases and injuries that account for the highest number of DALYs worldwide. Prevalence increases and peak between the ages of 35 and 55. Nearly 8 out of every 10 people will have low back pain at some point in life. Low back pain is one of the top reasons people seek medical treatment. The purpose of this study was to study the effect of acupuncture therapy on low back pain due to lumbar spondylosis. The study design was hospital based Quasi-experimental study at 100 bedded Traditional Medicine Teaching Hospital (TMTH), Mandalay for one year. Study Population was the subjects with low back pain due to lumbar spondylosis who were attending at Physical Medicine Ward in 100 bedded TMTH, Mandalay. Subjects were collected by consecutive sampling method according to inclusion and exclusion criteria. After taking history, performing physical examination and investigated by X-ray, subjects who fulfill the eligible criteria for this study were explained thoroughly about treatment procedure, possible complications and discomfort. The written informed consent from the subject was obtained to participate in this study. Acupuncture therapy was given for five consecutive days and then took a rest without giving treatment one day and assessed the next day. The session of therapeutic procedure lasted for 7 days and included 3 sessions during the period. Time frame was from 2016 to 2017. The effectiveness of acupuncture was measured with back and leg pain (back pain at the time of examination, leg pain at the time of examination, the worst back pain within the last 2 weeks, the worst leg pain within the last 2 weeks, average level of back pain during the last 2 weeks, average level of leg pain during the past 2 weeks), physical impairment (back muscle endurance, back mobility, overall mobility test, analgesic use) and disability index including fifteen questions. The assessment of signs and symptoms were done on day 0, day 7, day 14 and day 21. Statistical analysis on pair *t* test and General Linear Model method was done by using SPSS statistics (version 21). It was evidenced that the mean effect on low back pain due to lumbar spondylosis was statistically significance ($p=0.000$). In the present study, the mean score of signs and symptoms before treatment was 86.73 and after treatment was 54.03 and so *p* value was 0.000. The mean score of signs and symptoms was significantly decreased. Therefore acupuncture therapy can be used in case of low back pain due to lumbar spondylosis.

**‘HEALING EFFECT OF ATHANU. TE' HPAJAUN:
GJE'(အသားနုတက်ဖယောင်းချက်)WITH ADJUVANT TMF THERAPY ON VRANA’**

Khaing Zar Linn¹, Khin Yatanar Hlaing¹, Thin Thin Toe², Linn Zaw Win¹,
Aung Kyaw Min¹, Nu Nu Lwin¹, Kyaw Oo³ & Theim Kyaw¹

1. University of Traditional Medicine, Mandalay

2. Department of Medical Education, University of Medicine, Mandalay

3. Deputy Director General, Department of Human Resources for Health, Nay Pyi Taw

ABSTRACT

Vrana is the term of Ayurveda which denotes as “wound or ulcer”. Many of *Vrana* heal up well in normal course of time. Approximately one-fourth of *Vrana* delay to heal due to their natures and underlying pathologies such as diabetes mellitus, tuberculous infection, malignancy, immunodeficiency syndrome and some vascular diseases etc. In Ulcer and Sore Ward, Mandalay Traditional Medicine Teaching Hospital (MTMTH), many types of wound healing application are used with adjuvant TMF oral therapy. Among these medicines, Athanu. Te'HpaJaun: Gje' is the most commonly used medicine. It has been used in Mandalay Traditional Medicine Teaching Hospital since 1991. This scientific study was conducted to evaluate the healing effect of Athanu. Te' Hpa Jaun: Gje' with adjuvant TMF Therapy on 30 *Vrana* patients by hospital based quasi experimental study design in Mandalay Traditional Medicine Teaching Hospital from 1st August 2016 to 31st July 2017. Oral administration of TMF - 6, TMF - 12, TMF - 17 and TMF - 23 were used as adjuvant TMF therapy to modify healing effect. The improvement of wound characteristics were compared by Pair Sample T-test using SPSS software. The assessment were performed every 7th day from day 0 to day 35. From day 0 to day 7, all patients were given only oral medicine. From day 7 to day 35, Athanu. Te' HpaJaun: Gje' was applied onto *Vrana* and oral medicine were also given. Although total mean scores of all characteristics of *Vrana* were increased at day 7, total mean scores of those were decreased at day 14, day 21, day 28 and day 35. Besides, *p* values between treatment intervals (day 0, day 7, day 14, day 21, day 28, day 35) were statistically significant ($p < 0.01$). Percent relief of each wound characteristics after treatment were obviously relieved. According to both clinical and statistical assessment, there were favourable results upon wound healing process. Athanu. Te'HpaJaun: Gje' can be used in different types of *Vrana* without complications such as itching and burning sensation.

Keyword: Healing Effect, *Vrana*, Athanu. Te' HpaJaun: Gje'

**Antihyperglycemic activity of hydroalcoholic extract of leaves of *Mimusopselengi* Linn.
on patients with uncomplicated Type 2 diabetes mellitus**

**KhaingThae Su Htwe¹, Linn Zaw Win², Sam Sam Htuu², KyiKyi Oo²,
Theim Kyaw², KyawThein Htay³**

1. 100 Bedded Traditional Medicine Hospital, Nay Pyi Taw
2. University of Traditional Medicine
3. Department of Traditional Medicine

ABSTRACT

Mimusopselengi L. commonly known as *Kha Yay* which belongs to the family Sapotaceae is a valuable medicinal plant for the control and treatment for Type 2 diabetes mellitus patients. This study was aimed to determine the antihyperglycemic activity of hydroalcoholic extract of leaves of *M. elengi* L. on 30 patients with uncomplicated Type 2 diabetes mellitus. This study was conducted by hospital based clinical trial at 100 bedded Traditional Medicine Teaching Hospital. This clinical trial took out from August 2016 to July 2017. Thirty patients from 100 bedded Traditional Medicine Hospital, Mandalay who fulfill the inclusion and exclusion criteria were studied in this study. The mean age of patients 23% of male and 77% of female was 50.47 ± 7.17 years old. The hydroalcoholic extract was done by Reflux extraction method. The concentrated extract was made into powder by using freeze-dryer and freeze powder (14%) yield. The capsule dosage form of freeze dried powder of *M. elengi* L. was prepared by semi-auto filling machine and evaluation of capsules were tested. The four capsules filled with extract powder (1128mg) were administered to each patient. In the clinical study, the FBS, 2HPP, serum urea and creatinine were determined by Pentra 400 fully Automated Analyzer on day 0 and day 7. Before intervention, the mean FBS level (Mean \pm SD) was 236.75 ± 68.67 mg/dl. After intervention on day 7, it was 178.65 ± 61.38 mg/dl ($p < 0.0001$) and 24.54% of blood glucose level was reduced. In comparison of FBS levels between before and after intervention, FBS level reduced significantly. Before administration, the mean 2HPP level (Mean \pm SD) was 357.85 ± 92.42 mg/dl. After intervention on day 7, Mean \pm SD of 2HPP level was 271.39 ± 80.36 mg/dl ($p < 0.0001$) and 24.16% of blood glucose level was reduced. In comparison of 2HPP levels before and after intervention, 2HPP level statistically significantly reduced. It was also observed that serum urea and creatinine were normal range after treatment. It was clinically proved that hydroalcoholic extract of leaves of *M. elengi* L. had the antihyperglycemic activity on patients with Type 2 diabetes mellitus.

COMBINATION EFFECT OF *PATRAPINDA SWEDA* (HOT FOMENTATION) AND MASSOTHERAPY ON *APABAHUKA* (FROZEN SHOULDER)

Hnin Yu Maw Htwe¹, Naing Kee Myu Mang¹, New Nwe Yee¹, Win Ko², Maung Maung Thet¹, Dr Kyaw Oo³, Dr Theim Kyaw¹

1. University of Traditional Medicine, Mandalay
2. Myanmar Traditional Medicine Council, Mandalay
3. Department of Human Resources for Health

ABSTRACT

The present study was done to frozen shoulder patients admitted to IPD and OPD Ward, Traditional Medicine Teaching Hospital (TMTH), Mandalay to find out the combination effect of *Patrapinda Sweda* and Massotherapy. And it's also common clinical problem in traditional medicine. The study design of this study was hospital based clinical trial carried out from August 2016 to July 2017. After getting informed permit from IPD and OPD in 100 bedded TMTH, Mandalay, Total 40 subjects who were selected according to inclusion and exclusion criteria. The treatment duration of this study for each patient was 24 days and registered patients of frozen shoulder were prescribed for oral administration of placebo tablet form (2g) two times per day with warm water. The combination effect of *Patrapinda Sweda* and Myanmar Massotherapy was assessed with pain, tenderness, inflammation and range of motion (abduction, flexion, external rotation and internal rotation) by using goniometer on day 8, day 16 and day 24. Statistical analysis on paired *t- test* and General Linear Model method was done by using SPSS statistics (version 21). There was statistically highly significant in pain 78.5% ($p = 0.000$), inflammation 50% ($p = 0.000$), abduction 49.6% ($p = 0.000$), flexion 52.34% ($p = 0.000$), external rotation 53.12% ($p = 0.000$) and internal rotation 53.75% ($p = 0.000$). In this study, there was no significant in tenderness 8.75% ($p = 0.006$). Out of 40 patients after completion of treatment 3 patients (7.5%) were marked improvement, 37 patients (92.5%) were moderate improvement. There were not any patients in cure, mild and unchanged improvement level. Overall improvement for treatment were 53.00% ($p = 0.000$). It proved that combination effect of *Patrapinda Sweda* and Massotherapy can be provided to get better outcome in the management of frozen shoulder.

Keywords; *Patrapinda Sweda*, Massotherapy, frozen shoulder, *Apabahuka*

**EFFECT OF *THWAY-TOE-KYA-HSEI* (*AHD-9*) COMMONLY USED IN
MANDALAY TRADITIONAL MEDICINE TEACHING HOSPITAL ON
MODERATE HYPERTENSIVE PATIENTS**

Ei Ei Cho¹, Aye Chan Thu Zar Hlaing¹, Win Myint¹, Win Naing¹, Kyi Kyi Oo¹, Theim
Kyaw¹, Kyaw Oo²

1. University of Traditional Medicine, Mandalay
2. Deputy Director General, Department of Human Resources for Health, Nay Pyi Taw

ABSTRACT

Hypertension is the most common cardiovascular illness and is a major public health issue in developed as well as in developing countries. *Thway-Toe-Kya-Hsei* (*AHD-9*) which is composed of nine plant materials, has been used in hypertensive patients at traditional clinics and hospitals. This study was conducted to determine the antihypertensive effect of *AHD-9* by a double blind randomized clinical trial on moderate hypertensive patients during 2016 - 2017. The forty patients aged 35 to 65 were randomly divided into two groups; (Test group: n = 20 and Control group: n = 20). The test group was given *AHD-9* three times per day with warm water daily for three days and *MTMF-28* as control. Blood pressure was measured daily in the morning and evening of day 0 to day 4. The mean SBP and DBP of patients were compared before and after intervention, as well as also between test drug and control by using paired *t*-test. In test group, at 6:00 am, the mean SBP reduced 36 mmHg from 158.55 ± 6.278 mmHg on day 0 to 122.55 ± 6.809 mmHg on day 4 ($p < 0.001$) and the mean DBP reduced 20 mmHg from 100.10 ± 6.298 mmHg on day 0 to 80.00 ± 8.429 mmHg day 4 ($p < 0.001$). At 6:00 pm, the mean SBP reduced 38.5 mmHg from 160.00 ± 64.291 mmHg on day 0 to 121.50 ± 6.303 mmHg on day 4 ($p < 0.001$) and the mean DBP reduced 21.75 mmHg from 101.50 ± 3.284 mmHg on day 0 to 79.75 ± 8.346 mmHg, ($p < 0.001$). In control group, at 6:00 am, the mean SBP reduced 31.65 mmHg from 156.25 ± 5.820 mmHg on day 0 to 124.60 ± 8.586 mmHg on day 4 ($p < 0.001$) and the mean DBP reduced 18.1 mmHg from 99.35 ± 6.158 mmHg on day 0 to 81.25 ± 5.711 mmHg on day 4 ($p < 0.001$). At 6:00 pm, the mean SBP reduced 34.65 mmHg from 158.85 ± 2.924 mmHg to 124.20 ± 8.433 mmHg day 4 ($p < 0.001$) and the mean DBP reduced 19.85 mmHg from 99.95 ± 6.419 mmHg on day 0 to 80.10 ± 5.524 mmHg on day 4 ($p < 0.001$). The results showed that the mean SBP and DBP of patients in both test and control groups reduced significantly ($p < 0.001$) before and after treatment. In comparison antihypertensive effects between *AHD-9* and *MTMF-28*, the blood pressure in both groups were not significantly different. There were no obvious side effects and no special complaints of the subjects during the study. Therefore, it was concluded that *AHD-9* could be provided for the treatment on moderate hypertensive patients.

Keywords: *AHD-9*, *MTMF-28*, Moderate Hypertensive Patients

**“ANTIBACTERIAL ACTIVITY OF VARIOUS EXTRACTS OF SA LIN: KHOU
KJAUN HPJU HSEI: (SLKKPH) AGAINST *Escherichia coli* CAUSING
DIARRHOEA”**

Aye Mya Thidar¹, Zin Mar Lwin¹, MyaThidar Phyu¹, Saw Myat Thwe²,
Ni Ni Zaw³, Than Ohn¹, Myintzu Tin Oung² & Theim Kyaw¹

1. University of Traditional Medicine, Mandalay

2. Department of Medical Research (Pyin Oo Lwin Branch)

3. Consultant Microbiologist, Mandalay General Hospital

ABSTRACT

Diarrhoea remains one of the main causes of morbidity and mortality in children and a large proportion is caused by diarrhoeagenic *Escherichia coli* (Myat-Thidar *et al.*, 2008). In Myanmar, various traditional medicine formulations are clinically used to prevent or cure infectious diseases. Therefore, this study was carried out to evaluate the antibacterial activity of the aqueous, 50% ethanolic and 95% ethanolic extracts of *Sa Lin: KhouKjaunHpjuHsei: (SLKKPH)* against *Escherichia coli* causing diarrhoea by quantitatively agar dilution and qualitatively agar well diffusion methods for evidence-based traditional medicine. The standard antibiotic used was ceftriaxone. Agar dilution method showed that the aqueous, 50% ethanolic and 95% ethanolic extracts of SLKKPH had no antibacterial activity at the concentration ranging from 0.05 mg/ml to 3.5 mg/ml. Agar well diffusion method revealed that 50% ethanolic extract had antibacterial activity against *Escherichia coli* and the zones of inhibition were found 8 mm to 13 mm (ranging from 0.175 mg/50 μ l to 10 mg/50 μ l). Similarly, 95% ethanolic extract had antibacterial activity against *Escherichia coli* and the zones of inhibition were found 8 mm to 22 mm (ranging from 0.175 mg/50 μ l to 10 mg/50 μ l). Comparison of mean zones of inhibition of ten different concentrations (ranging from 0.175 mg/50 μ l to 10 mg/50 μ l) of both 50% and 95% ethanolic extracts revealed that mean zones of inhibition of the 95% ethanolic extract were significantly larger than that of the 50% ethanolic extract against *Escherichia coli*. The 50% and 95% ethanolic extract had dose response relationship ($r = 0.937$, $p < 0.001$) and ($r = 0.948$, $p < 0.001$) and then antimicrobial potential with activity index (AI) was 0.36 and 0.61 respectively. Qualitative phytochemical analysis revealed that alkaloids, flavonoids, phenolic compounds, tannins and saponins were present in both ethanolic extracts. These chemical constituents can be assumed to produce antibacterial effect of both extracts. With additional research, ethanolic extracts showed better result as compared to aqueous extract. According to the result of this study, SLKKPH had antibacterial activity against *Escherichia coli*. Therefore, SLKKPH may be recommended in the treating of infectious diarrhoea caused by *Escherichia coli*.

Keywords: *Sa Lin: KhouKjaun Hpju Hsei: (SLKKPH)*, Antibacterial Activity

Escherichia coli

ANTIBACTERIAL ACTIVITY OF TUBEROUS ROOT EXTRACTS OF
STEMONA COCHINCHINENSIS GAGNEP.

(GONE-THA-MYA)"

Theingi Swe¹, KhinHtet Zin¹, KyiKyi Oo¹, Yadanar¹, SoeMyint Aye², Ni Ni Zaw³,
Myintzu Tin Oung⁴, Win Soe¹&Theim Kyaw¹

1. University of Traditional Medicine, Mandalay
2. Department of Botany, University of Mandalay
3. Department of Microbiology, Mandalay General Hospital
4. Department of Medical Research (PyinOoLwin Branch)

ABSTRACT

Bacterial infections are one of the most prominent causes of chronic diseases and physical disabilities around the world. Since the antibiotic resistance and multidrug resistance microorganisms have developed, various species of plants have been screened for antibacterial activity in an attempt to replace the synthetic chemical drugs currently being used. Among them, *Stemonacochinchinensis*Gagnep. is a valuable medicinal plant which root is used as antiseptic in skin infection such as wounds and burns in Myanmar traditional medicine. This study aimed to determine the qualitative phytochemical constituents and antibacterial activity of the various extracts of this tuberous roots. The preliminary phytochemical constituents of aqueous, ethanolic and methanolic extracts were analysed by the method of Raaman(2006). In phytochemical screening, it was observed that alkaloids, polyphenol, steroids, amino acids, carbohydrates and tannins are present in all three extracts. The different concentrations of aqueous, ethanolic and methanolic extracts were assayed against *Staphylococcus aureus* (ATCC 25923), *Pseudomonas aeruginosa* (ATCC 27853) and *Escherichiacoli* (ATCC 25922) with agar dilution method and disc diffusion method. Cefotaxime(30 µg/ml) was used as standard drug for both gram positive and gram negative bacteria. The findings from the agar dilution method showed no antibacterial activity against these microorganisms up to concentration of 500 µg/ml. In disc diffusion method, it was indicated that ethanolic and methanolic extracts possessed antibacterial activity against *S. aureus* with significant dose response relationship ($r = 0.892$, $p < 0.05$) and ($r = 0.894$, $p < 0.05$) respectively. These extracts exhibited antimicrobial activity against *S.aureus*, AI = 0.48 and AI = 0.40 at 5 mg/disc in comparing with cefotaxime(30 µg/ml). Therefore, this study proved that the tuberous roots of this plant had potential for the treatment of bacterial diseases such as gram positive bacteria to develop a new antibacterial drug.

Acute Toxicity And Antidiarrhoeal Effect Of Ethanolic Extract of “Le’ - Htou’ - Ka - La’ - Hsei:”

Moe Moe Aung¹, Kyi Kyi Oo¹, Ei Ei Htwe², Aye Hnin Thwe¹, Myintzu Tin Oung² & Thin Lae Win¹

1. University of Traditional Medicine, Mandalay
2. Department of Medical Research (Pyin Oo Lwin Branch)

ABSTRACT

Diarrhoea continues to be the leading killers of children under the age of five worldwide, according to the estimates of child mortality issued by the United Nations Children’s Fund (UNICEF). Diarrhoea and gastroenteritis of presumed infectious origin are the leading cause of morbidity (5.8%) in 2012 according to Health in Myanmar 2014. There are several modern and traditional antidiarrhoeal drugs in the local markets. At present, Myanmar Traditional Practitioners have been using “Le’ - Htou’ - Ka - La’ - Hsei:” (LHKLH) in the management of diarrhoea. The present study aimed to evaluate scientifically the acute toxicity and antidiarrhoeal effect of LHKLH on animal. LHKLH was prepared with four medicinal plant parts and one mineral used for the treatment of diarrhoea. It was extracted with 95% ethanol to obtain the ethanolic extract. The acute oral toxicity of LHKLH was undertaken according to OECD 425 guide-line (2008) in Wistar strain rats. The toxic signs of tested rats were observed at 1/2 hour, 1 hour, 2 hour, 24 hour and for next 14 days. In acute toxicity study, there was no death or toxic signs up to the maximum dose of 5000 mg/kg at the end of study. Therefore, LD₅₀ of LHKLH was > 5000 mg/kg. The antidiarrhoeal activity of the ethanolic extract was investigated by using castor oil induced diarrhoea model in albino mice and determined by two in vivo studies, measuring frequency of diarrhoea and percent of small intestinal transit (determination of antimotility action). In this study, compared with control, the ethanolic extract 80 mg/kg and 160 mg/kg significantly reduced in frequencies of diarrhoea at 2 hour after castor oil administration, ($p < 0.05$) and also reduced in mean frequencies of diarrhoea within 4 hours, ($p < 0.01$). The ethanolic extract 80 mg/kg had also reduced in percent intestinal transit, when compared with control, ($p < 0.05$). It was observed that the ethanolic extract 80 mg/kg was as nearly effective as loperamide, in reducing frequencies of diarrhoea at 2 hour and mean frequencies of diarrhoea within 4 hours after castor oil administration ($p < 0.01$). Similarly, it was also as nearly effective as loperamide in antimotility action ($p < 0.05$). The results of this study supported that the ethanolic extract of LHKLH has potential antidiarrhoeal effect and therefore it is possible to be used as home remedy for symptomatic relief of diarrhoea especially in rural areas where currently used antidiarrhoeal drugs such as loperamide and diphenoxylate are not easily available.

Keyword - Le’ - Htou’ - Ka - La’ - Hsei:, antidiarrhoeal activity, acute toxicity