

## Scientific Based evidence of the effects of combined Makka soil and zamzam water (Mud therapy MMT) in treating head and nervous system injuries: (Two case reports ) and head cap invention

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**Abstract: Aim:** Evidence based effects of combined Makka Mud therapy (MMT) in treating nervous system injuries. Material and methods: Prerparation of Makka Mud (MM) was from Makka soil from AL sail way –Al kaekea area- Jazan Road - KSA. ( MM) was chemically analyzed, It was full of elements, ions and heavy metals which included CO<sub>3</sub>, HCO<sub>3</sub>, SO<sub>4</sub>, Cl<sup>-</sup>, iron Fe, cobalt, Ni, copper Cu and zinc Zn, Na<sup>+</sup>, K<sup>+</sup>, Cd, Mn, Pb. MMT was applied on two cases: one female 14 years old suffered from head injury after car accident that caused UMNL and hemiplegic. The other case was a new born infant aged 8months with hydrocephalye. Results: Combined (MMT) lead to improvement of body function, decreased pain, improvement of nervous system AND reflexes, fine movements in two cases of head trauma and hydrocele. Conclusion: combined. (MMT) could be adjuvant complementary management for head and nervous system traumas. Further controlled studies are needed.

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**Key words:** Makka Mud Therapy- Nervous System - Reflexes - Head Trauma –Hydrocephaly.

### 1. Introduction:

It was mentioned in the Holy book of Muslims in the Quran, many ayat and also in Ahadith of the prophet Mohamed BPUH that Allah the most merciful the most graceful had created the first human Adam from different forms and stages of mud which originally formed from soil and water: Allah created the first human Adam from soil, mud, mud which can act like glue (lazebe as mentioned in Quraan ) and Allah created human from (salsal ) changed black hard mud without touching fire (non kooked) witch when knocked can produce sound. In another ayat, the human and all living being were created from water. In surat al najm, aya 32: Allah had created the human from earth.

In Al sfahani mud was formed from mixing the soil with water and other tafasser of Ibn kAtheer, al Galaleen and Ezz Abd Salam, Al fortoby and Al tabary and Shankity lately: salsal which was the unit formation of human meant the hard mud which changed without touching fire and had a sound when knocked on.

عمران: آية 59

خلفكم من تراب: سورة فاطر الآية 11 وسورة غافر الآية 67  
**يأيتها الناس إن كنتم في ريب من البعث فإنا خلقناكم من تراب سورة الحج آية 5، وقوله تعالى: ومن آياته أن خلقكم من تراب ثم إذا أنتم بشر تنشقون سورة الروم آية 20**

خلفكم من طين : الأنعام 2

بدأ خلق الإنسان من طين السجدة 7

وإذ قال ربك للملائكة إني خالق بشرا من طين: سورة ص آية 71  
سلالة من طين : سورة المؤمنون 12 قد يكون مراحل تكون الطين في سلسلة من تراب خلط مع ماء ثم طين لازب ثم صلصال من حمأ مسنون وكالفخار؟

إنا خلقناهم من طين لازب : الصافات 11 قال العز بن عبد السلام أي لاصق أي لزج

صلصال كالفخار : سورة الرحمن 14

صلصال من حمأ مسنون:سورة الحجر الآيات 26-28-33 طين اسود متغير له صلصلة : تفسير الجلالين والعز بن عبد السلام

أنسأكم من الأرض:سورة النجم،آية 32

جعلنا من الماء كل شيء حي : الأنبياء 30

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Examples of some verses mentioned in Quraan about human creation:

- Your creation from dust: Surat Fater 11 and Surat Ghafer verse 67
- *Your creation from clay: Surat Al Anaam (cattle) verse 2*
- *The creation of man began with the clay of Surat Al-Sajda verse 7*
- And as thy Lord said to the angels, I am the creator of man of clay Surat Sad, verse 71

- Drain (chain) of clay: Surat Al Moemenoon (The faithful people), verse 71

- I created them from the mud of Lazeb: Surah Al-Safafat, verse 11 Al- explained by Ezz ibn Abd al-Salam said that mud was adhesive and sticky

- Clay as pottery: Surat al-Rahman, verse 14

- Clay from hamaen masnoon: Surat al hejr verses 26-28-33 A variable which had changed black clay with a sound when knocked on chisel: Tafsir al-Jalalain and Al-Azaban Abd al-Salam

- Created you from the earth: Surah Al-Najm, 32

- We have made of water everything living: Surat Al Anbeya (Prophets ) verse 30

- He created every daba (creature) of water: Surah An - Nur verse45

- The creation of human was from water: Al - Furqan verse5 4

- Did not we create you from a humbled water Surat Al - Mursalat. verse20

It was reported that mud packs were beneficial for many health problems specially osteoarthritis Bellometti et al., 1979, osteoarthritis Costantino et al (2006). Odabasi et al (2009) Fioravanti et al (2010). rheumatic disease, Fioravanti et al, (2011), fibromyalgia Giannitti et al., 2008. Mud was recorded to be anti-inflammatory Giacomino , de Michele . 2007 and could change serum receptors of tumor necrosis factor Bellometti et al., (2002), and could change body enzymes Bellometti et al., (2005). It was noted that Oxidative stress, hemoglobin content, superoxide dismutase and catalase activity were influenced by sulphur baths and mud packs in patients with osteoarthritis. Jokić et al., (2010), patients with Psoriasis were treated mud bath therapy.

Costantino, Lampa. (2005). Patients with Musculoskeletal Rehabilitation were treated with mud compressors Gungen et al., (2015). Therapeutic

efficacy of peloid plasters in the treatment of osteoarthritis of the peripheral joints and spondylosis were documented Klimiuk et al., ( 2004) Mud could decrease pain and improve quality of life-Yilmaz et al., 2004.

The review of literature showed many studies were done on mud, however there was no study the effect of MM on improve healing of the nervous system after heat trauma or on hydrocephaly. The aim of this work is to find out Evidence based effects of combined Makka Mud therapy (MMT) in treating nervous system injuries with special reference to MMT.

#### **Ethics:**

The proposal of Makka Mud Therapy (MMT) researches were proposed and discussed IN THE PRESENCE OF THE SCIENTIFIC COMETTEE which was represented by forty experts from many medical disciplines especially ( Anatomy, physiology, hematology, Obstetric and Gynecology, pediatrics, primary care, rheumatology, orthopedics and evidence-based medicine), five continents and six countries (USA, UK, France, Netherlands, Sweden and Canada) were represented in that meeting at King Fahd Medical Research Center, King Abdulaziz, University, Jeddah, KSA, at the day of establishing the scientific chair for medical application of Yousef Abdul Latif Jameel Scientific Chair, (YAJ) Faculty of Medicine, King Abdulaziz University, Jeddah, KSA AT THE YEAR 1433Hijri.

KAU: King Abdulaziz University, Jeddah, KSA.

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Research granted by Yousef Abdul Latif Jameel Scientific Chair, (YAJ) Faculty of Medicine, King Abdulaziz University, Jeddah, KSA.

**Table1: shows Makka dry soil analysis without addition of water** under X-ray microanalyzer

Element	Item	Min	Max	Mean	Stddev
Element	C K	5.920	6.860	6.500	0.507
Element	O K	56.760	58.600	57.823	0.953
Element	Na K	1.060	1.170	1.120	0.056
Element	Mg K	2.200	3.380	2.283	0.091
Element	Al k	5.790	5.830	5.18	0.020
Element	Si k	14.020	14.690	14.340	0,336
Element	S k	0.070	0.080	0.073	0.006
Element	K K	1.270	1.440	1.347	0.086
Element	Ca K	4.750	5.360	4.997	0.321
Element	Ti K	0.280	0.380	0.347	0.058
Element	Fe K	4.910	6.220	5.350	0.753

## **2. Material and Methods:**

Makka soil analysis and water analysis was done in EGYPT in two places: Sues canal university –

Faculty of agriculture Postal adress: and Al Azhar University: The regional Center for Mycology and Biotechnology.

Samples of Makka soil and zamzan and mineral water were. examined. Samples of Makka soil alone and after mixing with zamzan magnetic water and after mixing with mineral water (Tables1 -5). The samples were examined by X-ray microanalysis examination.

X-ray microanalysis examination Al Azhar University The regional Center for Mycology and Biotechnology. Tabela 1-5.

The samples were examined (Tables1-5 ) under X-ray microanalyzer (Module Oxford 6587INCA x-sight) attached to JEOL JSM-550 LV scanning electron microscopy at 20KV after gold coating using SPI-Module sputter coater at the Regional Center of Mycology and Biotechnology, Cairo- Egypt.

**Table2: shows Makka soil analysis after mixed with Zamzam water under X-ray microanalyzer**

Element	Item	Min	Max	Mean	Stddev
Element	C K	6.910	7.510	7.227	0.301
Element	O K	58.070	58.780	58.307	0.410
Element	Na K	0.990	1.070	1.033	0.040
Element	Mg K	2.390	2.450	2.423	0.035
Element	Al k	5.920	5.980	5.940	0,035
Element	Si k	14.500	15.090	14.837	0.304
Element	S k	0.160	0.190	0.170	0.017
Element	K K	1.100	1.200	1.167	0.058
Element	Ca K	4.730	5.190	4.997	0.239
Element	Ti K	0.300	0.330	0.320	0.017
Element	Fe K	3.480	3.660	3.583	0.093

**Table3 shows analysis of Zamzam water under X-ray microanalyzer**

Element	Item	Min	Max	Mean	St ddev
Element	C K	64.410	66.000	65.203	0.795
Element	O K	33.220	34.650	33.960	0.716
Element	Cu K	0.540	0.650	0.580	0.061
Element	Zn K	0.240	0.290	0.260	0.026

**Table4 shows Makka soil analysis after mixing with mineral water**

Element	Item	Min	Max	Mean	Stddev
Element	C K	6.910	7.700	7.320	0.396
Element	O K	56.360	59.760	58.250	1.732
Element	Na K	0.990	1.210	1.080	0.115
Element	Mg K	2.500	2.520	2.513	0.012
Element	Al k	5.860	5.940	5.910	0.044
Element	Si k	13.940	15.360	14.563	0,726
Element	S k	0.220	0.290	0.67	0.040
Element	K K	1.060	1.280	1.33	0.127
Element	Ca K	4.800	5.900	5.227	0.590
Element	Ti K	0.230	0.300	0.270	0.036
Element	Fe K	4.980	4.130	3.473	0.592

**Table5 shows analysis of mineral water**

Element	Item	Min	Max	Mean	St ddev
Element	C K	65.350	67.220	66.423	0.965
Element	O K	31.890	33.970	32.820	1.057
Element	Cu K	0.390	0.530	0.463	0.070
Element	Zn K	0.240	0.360	0.297	0.060

Makka soil was analyzed chemically especially for the present work and was made in Egypt Suez

Canal University- Sues Canal by Head of the Department Prof Dr. Mohamed Ahmed Nasr (Table 6).



scan revealed enlarging right fronto- temporal subdural hygroma with mass effects.

#### **Medical treatment adjuvant complement therapy by (MMT)**

The patient received **medical treatment especially antibiotics**, physiotherapy and an adjuvant complement therapy by (MMT) mud packs put around the circumference of the head for ONE years in the following regime:

Preparing Makka Mud Pack (MMP): (MMP) was prepared by spreading the semisolid mud mixture with zamzam water on a shaved head. (MM was prepared as mentioned in material and methods above)

Three times application of Makka mud packs (MMP) was applied above a completely shaved head and around the forehead circumference for three hours, daily and the fourth applied **mud pack** was kept above the head and the patient slept all-night with the Makka mud (MM) pack with one cm thickness. Combined therapy with hijama (cupping) occurred and herbal (henna) treatment and honey.

**Follow up:** minimal right subdural hydromel.

#### **Hospital report**

No more depressed bone could be seen. (Right temporo-parietal hypodense (sequence of contusion): The initial diagnosis was.

#### **On the year 2007 Patient state**

The patient had left sided upper motor neuron (UML) findings, lefts side hemi paresis. Her vital signs were within normal LIMITS. Systemic examination was unremarkable.

The patient was recommended to have occupational rehabilitation and physiotherapy.

#### **On the year 2018 Patient state**

The patient continued until now is under rehabilitation and physiotherapy. The patient is now a college student graduate, the dysarthria had been less. the hemiplegic symptoms and signs decreased. though unstable gait similar to that of Parkinsons could be noted. Patient can speak slowly and with slight difficulty. However there had been improvement in fixing and adjusting the course and fine adjustment of the hand clock watch to point out the exact time by hours and seconds. The patient could not fix the hand watch before combined medical and physiotherapy and (MMT).

**Case 2:** New born female infant aged 8 months, weight was 5 kilos, suffering from epileptic fits. hydrocephaly and brain atrophy. Chest problems: Asthma and wheezes. The patient suffered from difficult suckling and eye squint as well as impaired some reflexes eye.

The patient was treated with mud packs around the head circumflex combined with colostum, negilla sativa, thym natural honey diets for one month every

two hours, and change the packs every one and half hour, and in the night there was no mud packs.

The patient was under Oxygen therapy in (B>>>Hospital) three times a day.

Results of the Makka mud (MMT) complementary therapy combined treatment: There was improvement in the epileptic fits almost disappeared.

There was improvement in suckling mother breast for feeding. there was improvement in body reflexes and improvement of squint and eye reflexes.

#### **4. Discussion:**

In the present work Makka Mud (MM) was formed by mixing soil from Sail WAY -road of JAZAAN -Makka KAEKEA area K SA with tap water or magnetic mineral water of Zamzam,.

The MM was left in moon light and sun light for 24 hours outdoors then to be used in room temperature.

**In the present work** mixing Makka soil with zamzam water to prepare Makka mud and leaving the mud in moon and light for 24 hours, that was done to prepare a similar base of the building units mentioned in Quraan that the original human being was created from mud or soil by Allah the ONLY CREATOR, the most merciful. Analysis of Makka soil mineral contents showed the presence of many minerals and ions which were proved to be found in the body built of human cells, tissues, organs, and systems So when using the MM T that will provide the various essential nutrients, minerals, ions that will add to body tissues and compensate what was damaged and caused diseases and health problems after traumas and lesions.

Makka Mud composition varied due to the place of origin., mineral constituents of mud varied with the kind of rocks found in the region and the process of soil formation. Secondly, mud property was influenced by kind of flora and fauna besides the surrounding environment of the region. That coincided with the Quraan, Suret Fater, aya27.

In the present study the improvement in nervous system of both cases was due to the direct effects of the Makka Mud (MM ) elements that were found as shown in table (1) of MM analysis as most body built elements were found especially *Magnesium Mg+and Sulphur carbonate CO3and HCO3, sulphate SO4, Calcium Ca+, chloride Cl-, and trace minerals, iron Fe, cobalt, nickel, copper Cu and zinc Zn., Soduim Na+, potassium K+, cadmium Cd. Manganese Mn, nikal Ni, lead Pb.* The results of the present work agreed with Bartram1998 in Bartram. Bartram's Encyclopedia of Herbal Medicine. Robinson. London. ISBN 1-85487-586-8. 8who mentioned *about Calcium, Magnesium and Sulphur*"Calcium combined

with protein to give structural solidarity to bones and flesh. Given with benefit to all bone problems, delayed union after injury, brittleness in the elderly, delayed dentition and weakness in rapidly growing children. Cataracts. Rickets in children. Muscle cramps, spasms, tremors, nervousness, insomnia and joint pains. Bodily effects included healthy teeth and bones, blood clotting, nerve and muscle resilience.

"Magnesium was an important mineral. Essential for use of vitamins B1 and B6, a deficiency of which affected the nervous system. Vasodilator. Platelet inhibitor. Deficiency might lead to disorders of arteries and kidneys: brittle bones, pre-menstrual tension, heart disease, muscle cramps, hypoglycaemia, insomnia, palpitation, tremor of hands or lower limbs; anorexia, anxiety, depression, tiredness, dizziness, confusion. Studies revealed that two thirds of patients with peripheral vascular disease were magnesium deficient. Absorption was blocked by the contraceptive pill, a high milk or fat intake. Chronic fatigue syndrome. Heart attack. It enabled the co-ordination of nerves and muscles. Healthy teeth and bones. That metal activated more enzymes in the body than any other mineral.

, carbonate, sulphate, chloride, bromide, fluoride and carbon. To name but a few of the trace minerals – iodine, aluminium, iron, cobalt, nickel, copper and zinc.

In the present study a comatose teenager after car accident, admitted to hospital in KSA had received combined treating medical especially antibiotics, physiotherapy, and MMT, hijama occurred and herbal in addition to honey.

The patient was diagnosed temporal subdural hygroma with mass treatment right, then after two years from the accident the diagnosis became. Right fronto- temporo-parietal hypodense, sequence of contusion **and later** The patient had left sided upper motor neuron (UML) findings, lefts side hemiparesis. Her vital signs were within normal LIMITS. Systemic examination was unremarkable At year 2018 the hemiplegic symptoms and signs decreased. although few times unstable gate similar to that of Parkinson's could be noted. However there had been improvement in fixing and adjusting the course and fine adjustment of the hand clock watch to point out the exact time by hours and seconds. The patient could not fix the hand watch before combined medical and physiotherapy and (MMT) with herbal and hijama.

In the present work the improvement of the patient body function in case 1 after the combined medical, physical and MMT and plant medical plants and hijama could be due to the effects of the combined therapy Mud had been proved to have a physical, mechanical, antiinflammatory anti toxic and stimulatory effect of the immune system. The promoting growth

effect because of the presence of many factors that could help body and nervous system regeneration because of changing in the body enzymes, and their inhibitors and the presence of growth insulin factor, and that would rebalance of the Hypothalamic – pituitary –adrenal –axis. Changing endorphins, cytokines, growth hormone, prolactin, prostaglandins, interleukins. The body blood circulation also was improved.

The improvement in the well- being of the patients might be due to the induction of growth factors and the action of MMT That agreed with Fioravanti et al.,2011 who pointed that Mud-bath therapy increased plasma  $\beta$ -endorphin levels and secretion of corticotrophin, cortisol, growth hormone and prolactin. It had recently been demonstrated that thermal mud-pack therapy induced a reduction in the circulating levels of prostaglandin E2 (PGE2), leukotriene B4 (LTB4), interleukin-1 $\beta$  (IL-1 $\beta$ ) and tumour necrosis factor- $\alpha$  (TNF- $\alpha$ ), important mediators of inflammation and pain. Spa therapy had been found to cause an increase in **insulin-like growth factor-1 (IGF1)**, which stimulated cartilage metabolism, and transforming growth factor- $\beta$  (TGF- $\beta$ ). There was also evidence of the positive action of mud-packs and thermal baths on the oxidant/antioxidant system, with a reduction in the release of reactive oxygen (ROS) and nitrogen (RNS) species.

In the present study the improvement of the nervous system and decrease in UMNL might be due to the effects of combined medical and physiotherapy and the direct effect of mud on the nervous system. That agreed with Tarkhan-Muuravi and Dzhakobiia 2006 who reported that 82 patients with traumas of peripheral nervous trunks (middle, ulnar, radial, tibular and tibial nerves) were investigated, including 44 persons with neuroapraxia of those trunks and 38 with axonotmesis. It was established that the patients with traumas of peripheral nervous trunks showed the presence of inflammatory process and sensitization of the body which was exposed in the reaction of precipitation at C-reactive protein with the increase of the content of serum glycoides and total nonspecific immunoglobulin E in blood serum. The investigated patients showed also decrease in nonspecific resistance of organism and change in immune status. All the above-referred shifts were more expressed at axonotmesis of peripheral nervous trunks. Rehabilitation with the use of Kumisi therapeutic mud and electro magneto field of millimeter range resulted decrease of inflammation process and body sensitization in patients with traumas of peripheral nervous trunks almost to disappearance of inflammation process and body sensitization. Such rehabilitation increased nonspecific resistance,

normalized the indices of immune reactivity. The above-referred positive shifts were comparatively well expressed at neuroapraxia of peripheral nervous trunks.

In the present study the improvement of the nervous system and decrease in UMNL and improvement of gate and decrease in pain sensation in case 1 might be due to the effects of combined medical and physiotherapy and the direct effect of MMT on the hypothalamic –pituitary –adrenal axis (HPA axis) and production of endogenous endorphin and stress hormones that reduced pain and inflammation. The results of the present work coincided with by Giacomino et al., 2007 who mentioned that fangothrapy in arthritis patients seemed to cause variations in amino acid involved in cartilage homeostasis, and also produced reduction in pain ratings in gonarthrosis. Mud modified nitric oxide, myeloperoxidase and glutathione peroxidase serum levels in arthritic patients and beta-endorphin and stress hormones in patients affected by osteoarthritis by reducing inflammation, pain and therefore diminished the cause of stress. They pronounced that the thermal stress associated with Fangothrapy, activated the pituitary gland and the biochemical effects of peat components had aside from their physical-thermal effects. Furthermore, steroids and antimicrobial activity of certain therapeutic mud has been suggested.

In the present study the in the case of head trauma after car accident who had upper motor neuron lesion UMNL and hemiplegia, the Pain had decreased and muscle tone and body functions and nerve reflexes had improved after combined MMT. The improvement in pain and Muscle tone and pain intensity can be positively progressed due to combined MMT. That was similar to Giannittet al.,2008 stated that Spa therapy was one of the most commonly used non-pharmacological approaches for many rheumatic diseases. In Fibromyalgia Syndrome (FS) it might be useful for the chronic widespread musculoskeletal pain. Because of the unknown etiology and the not clear understood pathogenesis, there was no standard therapy regimen for FS. Also the mechanisms of action of spa therapy were not completely known, but most probably the benefits could be derived from mechanical, physical and chemical factors. Muscle tone and pain intensity could be positively influenced by mud packs and thermal baths.

In the present study the brain edema IN CASE 1, hydrocele with brain atrophy IN CASE 2 decreased after combined (MMT). The improvement In CASE 1 in the head injury and CASE 2 of the newborn infant aged 8 months, The decrease in patients head edema could be due to the direct effect of combination of medical, physiotherapy and MMT as well as herbal,

hijame in addition to the colostrums feeding in the new born infant. that combination might produce anti-inflammatory, analgetic, antiedematic, actions and promoted immunity and hemodynamics. That was similar to Reshetova et al., 2004 who mentioned that experimental and clinical evidence (76 patients with osteoarthritis) justified combined use of thermovibration massage and lipid extract from therapeutic mud eplir. That combination produced analgetic, antiedematic, antiinflammatory actions and promoted normalization of systemic immunity and peripheral hemodynamics.

#### **Summary: What the combined MaKka Mud THERAPY MMT can do?**

It was reported that the moistness of the peloid mud relaxed the skin, opening the pores. That allowed impurities to be drawn out affecting a deep cleanse. At the same time nutrients were absorbed from the mud. As the mud dried the skin was tightened, and circulation of blood and lymph increased, accelerating the exchange process. The skin benefited from the mud; and the increase in circulation delivered nutrients already in the body, like oxygen. Impurities in the tissues, if not drawn out of the skin, were pushed away to the other organs of excretion; nutrients that had been absorbed through the skin were transported around the body to where they were needed. That removal of impurities and the double delivery of nutrients were rejuvenating for the skin, and the rest of the body as well. The skin would function more efficiently.

Makka Mud THERAPY could be useful for body cells as it could enhance Na/K pump and ion exchange in cells, especially in nervous system and could promote cure.

In the present study the improvement of the nervous system and decrease in UMNL and improvement of some nervous system reflexes, muscular-skeletal functions and decreased in pain sensation might be due to the effects of combined medical and physiotherapy and the direct effect of MMT. The results of the present study agreed with Tuzlata 2008 who mentioned that many hospital for Rehabilitation treated combined electrical and mud therapy. They treated diseases of the central and peripheral nervous system, muscular-skeletal conditions including rehabilitation, gynaecological complaints and skin conditions. Arthritis, sciatica, trauma, MS, conception, eczema, stress, and insomnia are a few more treatment possibilities.

Tap water or mineral Zamzam water which added to Makka soil to form Makka Mud (M M):

In the present study mixing tap water or mineral magnetic Zamzam water with the soil of Makka to prepare MMT for complimentary management OF nervous system injury, besides medical treating for

head trauma and hydrocephaly combined with herbal and physiotherapy and colostrums feeding for the new born infant case. That regime either using tap or Zamzam mineral water mixed with Makka soil used caused enhancement of disease improvement, decreased pain, improved body function and quality of life, The results of the present study were similar to Morer et al., 2017 who studied the role of mineral elements and other chemical compounds used in balneology: data from double-blind randomized clinical trials.

Morer et al., 2017 conducted a systematic literature review on balneotherapy about the specific therapeutic role of mineral elements and other chemical compounds of mineral waters and derivate peloids/muds and discussed the study methods used to evaluate it (in musculoskeletal conditions). They searched Medline by PubMed using the following key words: "spa therapy" "balneotherapy" "mud" "peloid" "mud pack Therapy" in combination with "randomized controlled trial" "double blind trial." They also reviewed the reference list of articles retrieved by the Medline search. They selected the double-blind randomized clinical trials that assessed the effects of mineral water or mud treatments compared to tap water, attenuated peloid/mud therapy or similar treatments without the specific minerals or chemical compounds of the treatment group ("non-mineral"). They evaluated the internal validity and the quality of the statistical analysis of these trials. The final selection comprised 27 double-blind randomized clinical trials, 20 related to rheumatology. A total of 1118 patients with rheumatological and other musculoskeletal diseases were evaluated in these studies: 552 of knee osteoarthritis, 47 of hand osteoarthritis, 147 chronic low back pain, 308 of reumathoid arthritis, and 64 of osteoporosis; 293 of these participants were assigned to the experimental groups of knee osteoarthritis, 24 in hand osteoarthritis, 82 of low back pain, 152 with reumathoid arthritis, and 32 with osteoporosis. They were treated with mineral water baths and/or mud/peloid (with or without other forms of treatment, like physical therapy, exercise...). The rest were allocated to the control groups; they received mainly tap water and/or "non-mineral" mud/peloid treatments. They found that Mineral water or mud treatments had better and longer improvements in pain, function, quality of life, clinical parameters, and others in some rheumatologic diseases (knee and hand osteoarthritis, chronic low back pain, rheumatoid arthritis, and osteoporosis) compared to baseline and non-mineral similar treatments. Morer et al., 2017 added that Internal validity and other limitations of the study's methodology impeded causal relation of spa therapy on these improvements. They pronounced that randomized clinical trials were very

heterogeneous. Double-blind randomized clinical trials seemed to be the key for studying the role of mineral elements and other chemical compounds, observing enough consistency to demonstrate better and longer improvements for mineral waters or derivate compared to tap water; but due to heterogeneity and gaps on study protocol and methodology, existing research was not sufficiently strong to draw firm conclusions. Morer et al., 2017 claimed that well-designed studies in larger patients' population were needed to establish the role of minerals and other chemical compounds in spa therapy.

The results of the present study were also similar to Maeda et al., 2018.

Who published a paper titled: Clinical and anti-aging effect of mud-bathing therapy for patients with fibromyalgia. Maeda et al., 2018 mentioned that Spa bathing is known as a medical treatment for certain diseases causing chronic pains. Spa water contains mineral components which lower the specific heat of the water, resulting in a higher efficiency to warm body-core temperature. This phenomenon yields pain-relieving effect for rheumatoid arthritis, low back pain, sciatic neuralgia, fibromyalgia, etc. They introduced medical and biological effects of mud-spa-bathing therapy for fibromyalgia other than pain relief, the changes of blood examination data, and the telomere length of circulating leukocytes. The enrolled 7 patients with fibromyalgia syndrome were hospitalized and were subject to daily mud bathing at 40 °C for 10 min for about a month. Then, their subjective pain was reduced to about a quarter in average. They also showed lowered serum triglyceride and C-reactive protein level, maintaining the levels of aspartate transaminase and creatine phosphokinase, and increased of the red blood cell count, the serum albumin level, and the serum LDL-cholesterol level in comparison with cases without mud-bathing therapy, suggesting that mud bathing prevents inflammation and muscle atrophy and improves nutritional condition in fibromyalgia. They added that, the analysis of telomere length of peripheral leukocytes revealed a trend of negative correlation between telomere shortening and laboratory data change of hemoglobin and serum albumin. Those telomeric changes could be explained hypothetically by an effect of mud bathing extending life-span of circulating leukocytes.

The results of the present study were similar to Antonelli and, Donelli 2018 who made a: systematic review on the effects of balneotherapy and spa therapy on levels of cortisol as a stress biomarker, They reported that balneotherapy and spa therapy were well-known practices, even though limited evidence had been produced about their biological effects. They assessed if balneotherapy, mud/peloid therapy, and spa therapy might influence cortisol levels. They



secondarily, aimed at understanding if those interventions might improve stress resilience. They searched PubMed/Medline, Embase, and Cochrane Library for relevant articles in English or Italian about studies involving healthy and sub-healthy subjects or patients with a diagnosed disease about effects of balneotherapy, mud/peloid therapy, and spa therapy on serum and salivary cortisol levels. Fifteen studies involving 684 subjects were included. Five studies investigated biological effects of balneotherapy alone. Two of them reported significant changes of cortisol levels in healthy participants. The other three studies reported no significant variations in patients with rheumatic conditions. No studies investigated biological effects of mud/peloid therapy alone. Ten studies investigated biological effects of spa therapy with or without included mud/peloid therapy, and in all but two studies, significant variations of cortisol levels were reported. Our main findings suggested that balneotherapy might have the potential to influence cortisol levels in healthy subjects, in such a way as to improve stress resilience. Spa therapy with or without included mud/peloid therapy demonstrated the same potential to influence cortisol levels also in sub-healthy subjects and in patients with a diagnosed disease. They concluded that balneotherapy and spa therapy might be considered as useful interventions for the management of stress conditions. They added that further investigation is needed because of limited available data.

### Conclusion:

combined **MaKka Mud** therapy ( mmt) lead to improvement of body function, decreased pain, improvement of nervous system and fine reflexes in two cases of head trauma and hydrocele. MMT could be adjuvant complementary management for nervous system traumas. Further controlled studies are needed.

### Summary of the invention:

These Methods Are Non Invasive methods using pre-prepared Makka Mud (MM) for complementary or alternative management of some diseases, health problems and especially head injuries. These methods involved the administration of (MM) after its preparation by mixing the purified soil of Kaekea area from Makka –The Sail way after dried from rain and purified –KSA to get a semisolid form or gel. MM will be spread on various sized cotton sheathes, or wraps, or strips, to shape a cap to be put on the head to fit the size of head circumference. A kit or article of manufacture containing MM pre-prepared (frozen) or in the solid virgin soil form accompanied by instructions for use of head problems. MM weigh 500-1000 gm can be put in bucket or plastic or cotton bags of various sizes. or glass jars or wooden box. The kits

could be put in separate forms or accompanied with one-two liters size bottles of Zamzam water. Video or CD or USB illustrating the way how to apply MM besides the instructions.

MM can be administered beside some information's on the mechanism of action of MMT.

### Detailed Discription of The Invention:

Soil of makka mud which was formed after rain fall in JAZAN road El kaekea- Sail way KSA.

A- Dry Soil of makka area which formed after rain fall in JAZAN road- El kaekea- Sail way in Kingdom of Saudi Arabia- KSA.

To be put in buckets of different sizes and separate bottles of **Zamzam water** could be used after mixing them forming semi solid mixture preparation to be used in room temperature. Then to be ready for use after exposure to sun and moon light outdoors in open air FOR 24 hours after.

B- Mud preparation was formed from Makka soil, mixed with **tap water or mineral** water in the room temperature to be semisolid to form mature mud or peloid. as mentioned before in A.

C- Different compressors. strips, cotton or semi-cotton sheathes of different size are to **shape a cap** to fit the injured head ( e. i: head fracture- hydrocele) and spread the mixture of prepared of MM.

C- Stored frozen Pre-prepared Makka Mud MM: (Makka peloid ) could be pre - prepared and saved in frozen state to keep the organism in static situation. then used when needed. and could be portable.

### What is claimed are:

1. PROVIDE DRY SOIL FROM Makka area – Kaekea- Road of Sail –Jazan- KSA. In addition to Mineral water or tap water or holy water Zamzam 500-100 ml in plastic container.

2. DRY SOIL FROM Makka area –Kaekea-Road of Sail –Jazan- KSA. could be put in sheathes plastic or cotton and separate plastic bottles of zamzan holy water or mineral or tap water.

3. Preprepared MM in the form of sheathes, bandages, compressors of different sizes to be shaped as cap on the feah. kept frozen. And ready for use.

Instruction Method Design To Prepare And Use Makka Mudpacks (Mmp)

- **Mud therapy for head injuries could be used in two forms.**

- **Mudpack**

- Mud packs: used for local application. The construct and usage of a mudpack was similar for all applications on the thickness and the size varies as per the usage. To make a mud pack first soak the soil from Makka area of Kakea – Sail way –Jazan way -KSA in tap water or Zamzam mineral water to form semi solid mixture or gel like MM preparation using wooden spatula, then leave the prepared MM mixture for 24hours exposed to moon light and sun light. Then

take a thin cotton or **muslin** sheath or cloth and apply Makka mud evenly on the cotton or muslin cloth to form a uniform thin layer of half to one cm in thickness. Fold all the sides to make it a compact pack.

**Makka Mudpack for Head:** A head mud pack is normally a thick narrow band. It is applied over the **fore head** or could be applied directly on head top as cap with thin cotton sheath on a completely shaved head. That would help to heal congestive headache, relieve pain immediately. Or form a head application on the head after its complete shave for hours and repeat application frequently daily for weeks or months for head trauma and hydrocephaly as complementary therapy.

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