

A Case-Report Highlighting effects of PMF and Camel Milk on a Multiple Sclerosis Patient

Sana AlAttas^{1,5*}, Hamed Adetunji², Faten Khorshid^{3,4,5}, Musab Ahmad Bazie Al-Yaseen⁴ and Kawthar G Alattas⁶

¹*Professor of Medical Virology, Biology Department, Faculty of Science, King Abdulaziz University, P.O. Box 80203, Jeddah 21589, Saudi Arabia*

²*Professor, Department of Epidemiology, Faculty of Public Health & Health Informatics, Umm Al Qura University Makkah, Saudi Arabia*

³*Professor of Cell biology and Cell Engineering, Department of Biology, Faculty of Science, King Abdulaziz University, P.O. Box 7946, Jeddah 23824, Saudi Arabia*

⁴*PMF natural products company, Block 17 H, Ataqa Free Zone, Adabeya, Suez, and P.O. Box: 4 Gulf of Suez, Arab Republic of Egypt*

⁵*Yousef Abdul Latif Jameel Scientific Chair of Prophetic Medicine Application, Faculty of Medicine, King Abdulaziz University, Jeddah, Saudi Arabia*

⁶*Quality specialist & Risk Manager. Unit of Patient Safety & Risk Management, Al Thagar Hospital Jeddah*

***Corresponding Author:** Sana AlAttas, Professor of Medical Virology, Biology Department, Faculty of Science, King Abdulaziz University, P.O. Box 80203, Jeddah 21589, Saudi Arabia; Professor, Department of Epidemiology, Faculty of Public Health & Health Informatics, Umm Al Qura University Makkah, Saudi Arabia.

Received: April 25, 2024; **Published:** April 30, 2024

DOI: 10.55162/MCMS.06.210

Abstract

This case highlighted the tremendous improvement experience in patient with Multiple Sclerosis treated when conventional treatments were combined with PMF capsules and Camel milk drink.

We therefore conclude from what is observed and suggest possible link between PMF and camel milk drink in this patient's tremendous improvement from MS. Further research is necessary including case series documentations to further reinforce the hypothesis that can be proven in larger case-control or cohort studies.

Our case demonstrated improvement in the management of Multiple sclerosis using PMF capsule with intermittent drinking of camel Milk.

Keywords: PMF; Multiple Sclerosis; Camel milk; Case report

Background

Multiple sclerosis (MS) is a chronic autoimmune, inflammatory neurological disease of the central nervous system (CNS) (Calabresi, 2004; Hauser and Goodwin 2008). The disease attacks the myelinated axons in the CNS, destroying the myelin and the axons to varying degrees (Weinshenker 1996; Olek, 2011). The course of MS is highly varied and unpredictable. In most patients, the disease is characterized initially by episodes of reversible neurological deficits, which is often followed by progressive neurological deterioration over time. In 2019 GBD estimation of world prevalence for 2016 was 2221 188 of MS which corresponds to 30.1 % per 100000 population (95% IU 2033 866-2436858) (GBD 2016 Multiple Sclerosis Collaborators, 2019). From 250,000 to 350,000 patients in the U.S. have MS, 5 and 50% of patients will need help walking within 15 years after the onset of the disease (Navikas and Link, 1996).

Twice as many women are affected as men, and persons of Northern European descent appear to be at highest risk for MS (Hauser and Goodwin 2008; Cree 2007). The disease is diagnosed on the basis of clinical findings and supporting evidence from ancillary tests, such as magnetic resonance imaging (MRI) of the brain and examination of the cerebrospinal fluid (CSF). Multiple sclerosis typically presents in adults 20 to 45 years of age; occasionally, it presents in childhood or late middle age (Cree, 2007). The cause is unknown, but it appears to involve a combination of genetic susceptibility and a monogenetic trigger, such as a virus, metabolism, or environmental factors, that together result in a self-sustaining autoimmune disorder that leads to recurrent immune attacks on the CNS (Cree, 2007; Goldenberg, 2012; Khorshid, Osman and Abdulsattar, 2009).

There is no single diagnostic test for MS (Hauser and Goodwin 2008). The diagnosis is based on evidence of (1) at least two different lesions (plaques or scars) in the white matter of the CNS (the space dissemination criterion); (2) at least two different episodes in the disease course (the time dissemination criterion); and (3) chronic inflammation of the CNS, as determined by analysis of the CSF (the inflammatory criterion). Also, there is no specific cure for MS. Treatment is usually directed to accelerating recovery during attacks and slowing down further retrogression and symptomatic relief.

PMF is a new pharmaceutical drug prepared by alcoholic extracting of camel urine and was proven to have selective toxicity and anticancer substrates (Khorshid, Osman and Abdulsattar, 2008). PMF is a new effective anticancer drug PMF is proved to be highly selective agent for many types of cancer in tissue culture levels and in the animal model as well (Khorshid, Osman and Abdulsattar, 2009; Khorshid, 2008; Khorshid, 2009; Khorshid et al., 2011; Khorshid et al., 2015). It has been tested on healthy volunteers and passed the clinical trial phase I successively 2010). The effects that PMF may have on MS is therefore reported in this case study. This report will highlight the patient experience from the commencement of PMF capsules (500mg/day) used with drink of Camel milk.

Case presentation, management and follow-up Report

A 24-year-old Arab woman from Kuwait was diagnosed with MS in the age of 19 had a conventional treatment for MS and suffered relapse many times for 5 years. Symptoms before using PMF capsules(500mg/day) included the following:

Balance: There was an imbalance and a lack of control on walking straight drifting to the right side while walking.

Vision: Had a blurry vision and sometimes she could not even focus on anything.

Tingling and numbness: She suffered from tingling and numbness, especially in the feet and legs and this even sometimes reaches to the lower half of the body.

The general fatigue and movement: There were a lot of tiredness, a sense of dizziness, pain in head and shoulders. She was not able to move much, unable to sit or walk in crowded places as She felt suffocated and could not stand for a long period of time.

Physical activity: It was impossible for her to exercise or walk, because of fatigue, numbness in the whole body.

Symptoms After using the PMF capsules were as listed below

Balance: After a short period of using PMF capsules(500mg/day), improvement was observed in balance. With the long term of PMF capsules usage(500mg/day), she was improving in her balance skill. An improvement of 90% was seen comparing with previous balance skill.

Vision: After a short period of using PMF capsules(500mg/day), an improvement in vision was observed. On the long term of using PMF capsules, all sorts of suffering from focusing on objects and blurry vision troubles had disappeared and her level of concentration had improved significantly.

The general fatigue and movement: After a short period of using PMF capsules (500mg/day) limbs numbness was decreased, but on the long term, there was an improvement, in terms of that tingling feeling and numbness comes only with extreme tiredness and

when going for a long walk that reaches nearly an hour. However, having a short rest for 5 to 15 minutes was enough to clear this type of tiredness feeling.

Physical activity: There were good improvements in fatigue status, pain in head and shoulders, and the sense of dizziness. Patient reported she was able to move well and to visit closed and crowded areas without any suffocation or fatigue feelings.

Management and Follow-up

This case has been managed initially with MS treatment protocol and monitored Series of MRIs reports. She was placed on PMF, a capsule per a day (500mg/day) with intermittent drinking of camel's milk. May 2014 was the beginning of PMF usage of capsulated extracted and camel milk, in a rate of one capsule per a day(500mg/day) with drinking camel's milk intermittently.

Summary of the series of MRI before May 2014, shows that the patient has both cranial and spinal cord lesions. In the brain, lesions are predominantly in both cerebral hemispheres including corpus callosum, and right cerebellar peduncle while in the spinal cord, they are in the cervical region spanning the upper 5 cervical vertebral bodies.

Except for the test done on 26/6/2013, all the tests were compared to the penultimate ones. There was a new lesion in the left centrum semi ovale in 2010 when compared to 2009 report in keeping with disease progression. Patient exhibited stable disease between 2010 and 2012. However, between December 2012 and July 2014, there were evidence of disease progression in brain; new lesions were found in the medulla oblongata and high parietal subcortical white matter. The spinal cord lesions were stable.

Observations after the commencement of PMF: There was a significant turn of event in January 2015. Some lesions got smaller in size in both the brain and spinal cord when compared to images of July 2014, which implied improvement in the appearance of the disease. May 2014 was the beginning of PMF usage. Since that time up till March 2018, the disease has shown stable picture. This period represents remarkable achievement as it was the first time there was radiological improvement in the disease, and the longest period of stability.

Discussion

We report a case of 24-year-old female MS patient who had conventional treatments for MS and suffered relapse from time to time for 5 years, and then got symptoms improvement with combined treatment with PMF one capsule per a day with intermittent drinking of camel's urine. The aim of this study is to explore various PMF Nanoparticles structure and their mechanism of action that can be hypothesized to support reason(s) for this patient improvement.

It was observed that the patient scan shown improvement after the commencement of both PMF and camel milk drink. Properties of both urine and milk of the camel have been well researched and the improvement seen might be related. The one-humped camel (*Camelus dromedaries*) For desert dwellers in Asia and Africa, the camel continues to be vital to daily life as a source of food and just as importantly, its milk and urine have been used as medicines for diverse ailments since ancient times (Gorakh and Pathak, 2010). However, beginning in the early 1980s, more orthodox publications began identifying specific diseases and medical conditions that have been treated by camel milk or urine, including cancer (Ikeda et al., 2000), chronic hepatitis (Sharmanov, Zhangabylov, and Zhaksylykova, 1982), hepatitis C infection (Redwan and Tabll, 2007; Ikeda et al., 2000) and peptic ulcers (Gorakh and Pathak, 2010; Sharmanov, Kadyrova and Salkhanov 1981; Abdel Galil, Abdel Gader and Alhaidar, 2016).

Urotherapy is classified under the category of alternative medicine, is a common practice in many countries, and is particularly significant in countries like India and China where alternative medicine is widely practiced (Alhaidar, Abdel Gader, & Mousa. 2011; Al-Abdalall, 2010). Human urine is the most widely used, it is used in the treatment of different human diseases (Alhaidar, Abdel Gader and Mousa. 2011). However, it is not restricted to these countries, with practitioners being found in the United States, United Kingdom and other European countries (Al-Abdalall, 2010).

An unconventional or complementary medical practice on the basis of trial and error and requires significant research to support its use in conventional medicine (Khorshid, Moshref Heffny, 2005). The religious aspect of using camel urine stems from the fact that there has been convincing evidence that the Prophet Mohamed advised its use in the treatment of a wide range of diseases (Gader and Alhaider, 2016; Alyahya, Gader and Alhaider 2016; Alhaidar, Abdel Gader and Mousa. 2011; Khorshid, Moshref and Heffny, 2005). Camel's milk and urine are used for the treatment of various diseases, such as cancer, ulcers, skin problems, chronic hepatitis, hepatitis C, stomach infections, a weakened immune system, infectious diseases and certain cardiovascular conditions (Khorshid, Moshref and Jamal 2006; Gader and Alhaider, 2016).

Furthermore, camel milk is endowed with anti-malignant (Khorshid and Moshref 2006), antiplatelet (Khorshid, Emwas and Mahboub (2015) and anti-thrombotic properties (Korashy, et al. 2012), in addition to a host of anti-bacterial and viral properties (Alhaidar, Abdel Gader and Mousa. 2011), suggesting, among other things, the existence of a very strong immune system, which was recently shown to be equipped with unique light-chain-only antibodies (Korish, Gader, and Alhaidar, 2015). These claimed therapeutic actions have recently been the subject of numerous studies, and there is now mounting scientific information detailing the constituents of camel milk and urine as well as their therapeutic components. These revelations lend scientific evidence to support the current practice of using these camel products for their therapeutic benefits. Camel milk possesses medicinal properties to treat different ailments such as multiple sclerosis, psoriasis, lupus, allergies-asthma (Conesa et al. 2008).

A Belgian biotechnology company (Ablynx NV, Ghent/Zwijnaarde, Belgium) has been testing these recently discovered unique features of the camel's immune system and its implications on human health by using animals from the camelid family (camels and llamas) to develop immune therapy for the treatment of cancer and other autoimmune diseases, like multiple sclerosis and Alzheimer's disease (Hamers-Casterman et al., 1993).

PMF contains some amino acids as theronine, Cysteine, tyrosine and methionine which are very important for damage the proliferation cancer cell. The presence of both peptide and receptor has been found to bind OGF_r (opiod growth factor) and hence a reduction in OGF_r- OGF_r interactions that would repress cell replication (Wernery, 2006). Also, S-Methylglutathione in PMF extracted content acts as an important defense mechanism against certain toxic compounds such as drugs and carcinogens³⁹. In conclusions, this extracted PMF may be used as anticancer and antioxidants for many diseases (Wernery, 2006; Gader and Alhaider, 2016).

Whereas numerous amino acids regulate various functions in normal cells and in oncogenesis. Receptor tyrosine-specific protein kinases are a subclass of cell-surface growth-factor receptors with an intrinsic, ligand-controlled tyrosine-kinase activity, and they are important target because they play an important role in the modulation of growth factor signaling (McLaughlin et al., 2004). Meanwhile, presence of tyrosine enhances the efficiency and selectivity of PMF on cancer cells. Glycine and cysteine, amino acids entering to glutathione structure, enhance its antioxidant activity and further improve the immune system (Murray, 2003). Arginine has immunomodulatory effects, such as stimulating T- and natural killer cells activity and influencing pro-inflammatory cytokine levels through activating interleukin-12 (IL-12) (Arora and Scholar, 2005). It also induces IL-23 that leads to the production of interferons (IFNs) and other tumor-suppressive factors. These molecules are activated as part of the antitumor immunity response and promote apoptosis to tumor cells (Andrus and Strickland, 1998).

We therefore conclude from what is observed and suggest possible link between PMF and camel milk drink in this patient's tremendous improvement from MS. Further research is necessary including case series documentations to further reinforce the hypothesis that can be proven in larger case-control or cohort studies.

Data Availability: Due to the nature of this research, the patient did not agree for identifying data to be shared publicly, so supporting data are not available.

We anonymized this case to protect the patient's confidentiality right.

Consent A written consent has been obtained from the patients, but we did not include any patient identifiable data in this case report.

Conflicts of Interest

The authors declare no conflicts of interest.

Acknowledgements

The authors wish to acknowledge the contributions of the following consultants in providing for reviews and commenting on the patient scanned reports:

1. Dr Wasiu Adeniyi, Consultant Radiologist, Federal Hospital, Abeokuta Nigeria (Formally at Haram Hospital Makkah, Saudi Arabia).
2. Dr Wahab Ahmed, Consultant Neurologist, Federal Hospital, Abeokuta Nigeria Abeokuta, Nigerian.
3. Dr Abubakr Neurology Specialist, Al Noor Hospital, Makkah, Saudi Arabia. They have been so wonderful by responding promptly when consulted during the review of this case.

References

1. Abdel Galil M, Abdel Gader and Abdulqader AA. "The unique medicinal properties of camel products: A review of the scientific evidence". *Journal of Taibah University Medical Sciences* 11.2 (2016): 98-103.
2. Al-Abdalall AHA. "The inhibitory effect of camel's urine on mycotoxins and fungal growth". *African Journal of Agricultural Research* 5 (2010): 1331-1337.
3. Alhaidar, A, Abdel Gader AGM and Mousa SA. "The antiplatelet activity of camel urine". *The Journal of Alternative and Complementary Medicine* 17 (2011): 803-808.
4. Alyahya AM, Gader AGMA and Alhaider AA. "Characterization of inhibitory activity of camel urine on human platelet function". *Journal of Taibah University Medical Sciences* 11 (2016): 26-31.
5. Andrus PG and Strickland RD. "Cancer grading by Fourier transform infrared spectroscopy". *Biospectroscopy* 4.1 (1998): 37-46.
6. Arora A and Scholar EM. "Role of tyrosine kinase inhibitors in cancer therapy". *J Pharmacol Exp Ther* 315.3 (2005): 971-9.
7. Bender DA and Murray RK. "Metabolism of Xenobiotics". In: Rodwell VW, Bender DA, Botham KM, Kennelly PJ, Weil P. eds. *Harp-er's Illustrated Biochemistry*, 31e. McGraw-Hill Education (2018).
8. Calabresi PA. "Diagnosis and management of multiple sclerosis". *Am Fam Physician* 70.10 (2004): 1935-44.
9. Conesa C., et al. "Isolation of lactoferrin from milk of different species: calorimetric and antimicrobial studies". *Comp Biochem Physiol B Biochem Mol Biol* 150.1 (2008): 131-9.
10. Gader AGMA and Alhaider AA. "The unique medicinal properties of camel products: A review of the scientific evidence". *Journal of Taibah University Medical Sciences* 11 (2016): 98-103.
11. GBD 2016 Multiple Sclerosis Collaborators. "Global, regional, and national burden of multiple sclerosis 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016". *Lancet Neurol* 18 (2019): 269-85.
12. Goldenberg MM. "Multiple sclerosis review". *P & T: a peer-reviewed journal for formulary management* 37.3 (2012): 175-84.
13. Gorakh Mal and KML Pathak. Camel milk and milk products. *Milk & milk products 97 SMVS' dairy yearbook 2010*, National Research Centre on Camel, P.B. No. 07, Bikaner, Rajasthan 334001 India. *SMVS' Dairy Yearbook* (2010).
14. Hamers-Casterman C., et al. "Naturally occurring antibodies devoid of light chains". *Nature* 363.6428 (1993): 446-8.
15. Hauser SL and Goodwin DS. "Multiple sclerosis and other demyelinating diseases". In: Fauci AS, Braunwald E, Kasper DL, Hauser SL, editors. *Harrison's Principles of Internal Medicine*. 17th ed. II. New York: McGraw-Hill Medical (2008): 2611-2621.
16. Ikeda M., et al. "Characterization of antiviral activity of lactoferrin against hepatitis C virus infection in human cultured cells". *Virus Res* 66.1 (2000): 51-63.

17. Khorshid FA, Moshref SS and Heffny N. "An Ideal Selective Anticancer Agent in Vitro, I- Tissue Culture Study of Human Lung Cancer Cells A549". JKAU- Medical Sciences 12 (2005): 3-18.
18. Khorshid FA, Moshref SS and Jamal Y. "The Effect of PM 701 on Mice Leukemic Cells: I - Tissue Culture Study of L1210 (In Vitro) II - In Vivo Study on Mice". JKAU- Medical Sciences 13.1 (2006): 3-19.
19. Khorshid FA and Moshref SS. "In Vitro Anticancer Agent, I - Tissue Culture Study of Human Lung Cancer Cells A549 II - Tissue Culture Study of Mice Leukemia Cells L1210". International Journal of Cancer Research 2.4 (2006): 330-344.
20. Khorshid F, Osman A and Abdel-Sattar E. "Cytotoxic activity of bioactive fractions from PM 701". Electronic Journal of Environmental, Agricultural and Food Chemistry 8.11 (2009): 1091-1098.
21. Khorshid FA. "Potential Anticancer Natural Product against Human Lung Cancer Cells". Trends in Medical Research 4.1 (2009): 9-15.
22. Khorshid FA. "Preclinical evaluation of PM 701 in Experimental animals". Int. J. Pharma 4.6 (2008): 443-451.
23. Khorshid FA., et al. "Cesium & Rubidium Nanoparticles Induce Apoptosis in A549 Cells". Life Sci. J 8.3 (2011): 534-542.
24. Khorshid FA., et al. "Dose Escalation Phase I Study in Healthy Volunteers to Evaluate the Safety of a natural product PM 701". Int. J. of pharma. toxic 5.3 (2010): 91-9.
25. Mahboub Faiza A., et al. "The Cytotoxic Effect of Small and Large Molecules of PMF Fraction Extracted from Camel Urine on Cancer Cells". British Journal of Medicine and Medical Research 6.4 (2015): 384-396.
26. Korashy HM., et al. "Camel milk triggers apoptotic signaling pathways in human hepatoma HepG2 and breast cancer MCF7 cell lines through transcriptional mechanism". J Biomed Biotechnol (2012): 593195.
27. Korish AA, Gader AM and Alhaidar AA. "The effects of camel milk on platelet function and coagulation parameters in streptozotocin diabetic rats". Intern J Dairy Technol 68 (2015): 79e87.
28. McLaughlin PJ., et al. "Opioid growth factor inhibition of a human squamous cell carcinoma of the head and neck in nude mice: dependency on the route of administration". Int J Oncol 24.1 (2004): 227-32.
29. Navikas V and Link H. "Review: cytokines and the pathogenesis of multiple sclerosis". J Neurosci Res 45.4 (1996): 322-33.
30. Olek MJ. Epidemiology, risk factors and clinical features of multiple sclerosis in adults (2011).
31. Redwan el-RM and Tabll A. "Camel lactoferrin markedly inhibits hepatitis C virus genotype 4 infection of human peripheral blood leukocytes". J Immunoass Immunochem 28.3 (2007): 267-277.
32. Sharmanov TSh, Kadyrova RKh and Salkhanov BA. "Effectiveness of peptic ulcer diet therapy using rations containing whole mare's and camel's milk". Vopr Pitan 3 (1981): 10-14 [Article in Russian].
33. Sharmanov TSh, Zhangabylov AK and Zhaksylykova RD. "Mechanism of the therapeutic action of whole mare's and camel's milk in chronic hepatitis". Vopr Pitan (1982): 17-23.
34. Weinschenker BG. "Epidemiology of multiple sclerosis". Neurol Clin 14.2 (1996): 291-308.
35. Wernery U. "Camel milk, the white gold of the desert". Journal of Camel Practice and Research 13.1 (2006): 15-26.

Volume 6 Issue 5 May 2024

© All rights are reserved by Sana AlAttas., et al.