

Use of MIG3[®] Bioceramic Mattress Liner to Patients with Post-Poliomyelitis Syndrome (PPS) and Cold Intolerance.

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Introduction.

Poliovirus type I was the first human viruses with three dimensional structure determined by X-ray crystallography method. Polioviruses have a ~ 30 nm diameter with a strong resistance to acid environment (lower than 3.0 pH). Post-Poliomyelitis Syndrome (PPS) occurs in a considerable percentage of recovered patients from paralytic poliomyelitis disease. The main Motor Neuron Disease /PPS symptoms are new-onset weakness, new-onset atrophy, fatigue, cold intolerance, pain and sleep disturbances. The pathogenesis cause of PPS is not understood yet, but one accepted hypothesis is the infected motor neurons degenerate and die. In such situation, the most widely adopted treatment to relief the discomfort in PPS patients is to employ empirical therapies. The purpose of the present study is to assess the influence of a mattress liner impregnated with MIG3[®] Far Infrared Ceramic Powder to the *pain* and *intolerance to cold symptoms* in PPS patients.

Materials and Methods.

Polyamide fabrics were impregnated with MIG3[®] micro particles on the textile filaments to produce the mattress liners as shown in Figure 1.

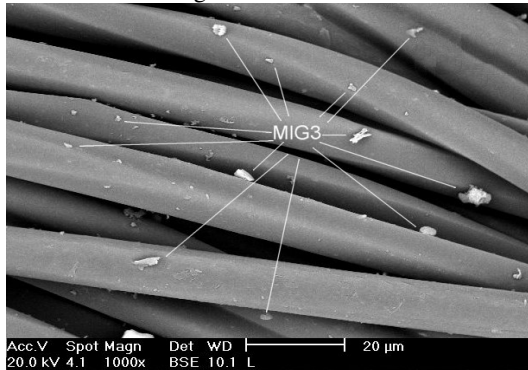


Fig. 1. Polyamide textile filaments impregnated with MIG3 ceramic microparticles.

The MIG3[®] Infrared spectrum can be seen in Figure 2.

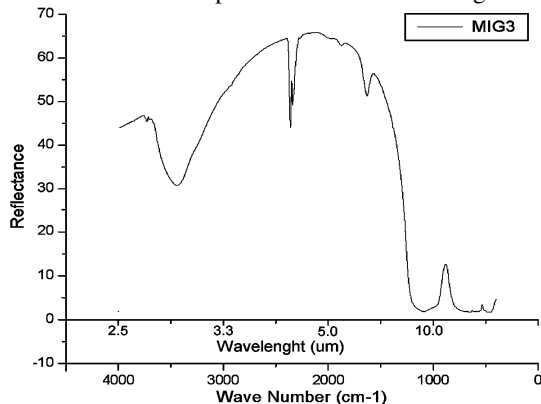


Fig. 2 – MIG3 FTIR spectrum.

12 Patients with PPS were submitted to infrared examination and answered scales of pain and intolerance to cold before and after the use of these mattress liner during 4 weeks. A thermal image of a patient before and after 4 weeks using Polyamide/MIG3 textile is shown in Figure 3.

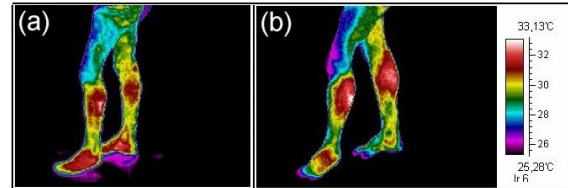


Fig. 3 – Thermal image of a patient: (a) before use of MIG3 mattress lining; (b) after 4 weeks of usage.

Results and Discussion.

The main effects of far infrared irradiation on the body are the increasing in the blood microcirculation and the immunity, stimulating the tissues regeneration and fluid regulation of the humoral system. These effects certainly occur decurrent of the MIG3[®] Ceramic/skin contact causing significant reductions in pain and cold intolerance symptoms after 4 week usage of MIG3[®] mattress liner as demonstrated in Figures 4 and 5.

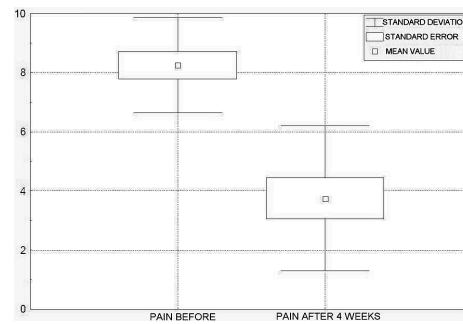


Fig. 4 – Pain scale before and after 4 weeks.

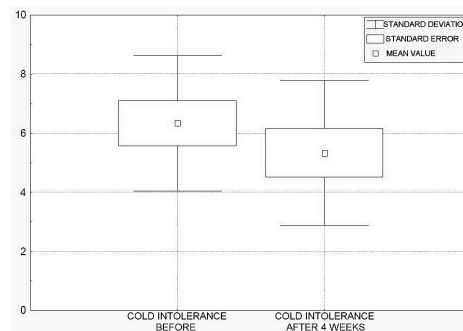


Fig. 5 – Cold intolerance scale before and after 4 weeks.

Conclusion:

MIG3 bioceramic mattress liner contributes to the treatment of pain and cold intolerance in PPS patients.