TREATMENT OF BONE MARROW EDEMA (BME) OF THE TALUS WITH PULSED ELECTROMAGNETIC FIELDS: OUTCOMES IN SIX PATIENTS

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Nicolò Martinelli

My disclosure is in the Final AOFAS Mobile App. I have no potential conflicts with this presentation.
BACKGROUND

IDIOPATHIC BONE MARROW EDEMA
RARE CAUSE OF FOOT PAIN, ALSO CALLED:
TRANSIENT BONE MARROW EDEMA OF THE TALUS

• ONLY CASE SERIES REPORTED IN THE LITERATURE
• TIME TO SYMPTOM REGRESSION VARIES AMONG THE STUDIES FROM 3 TO 22 MONTHS WITH OR WITHOUT INTERVENTION

It should be distinguished from bone bruises, stress fractures, early avascular necrosis.

Characterized by hypointense T1-weighted images and hyperintense T2-weighted/fat-saturated images at MRI WITHOUT A HISTORY OF TRAUMA

SEVERAL SYMPTOMATIC THERAPIES WERE SHOWN NOT TO AFFECT THE COURSE OF THE DISEASE. PROMISING RESULTS WITH IBANDRONATE
MATERIAL AND METHODS

6 PATIENTS (5 MALES, 1 FEMALE)
AGE 54.2 (RANGE: 38-63)

NO HISTORY OF TRAUMA
ROUTINE SEROLOGY WAS NORMAL
NO HISTORY OF ALCOHOL ABUSE
NO HISTORY OF CORTICOSTEROID MEDICATIONS
1 PATIENT WAS A MODERATE CIGARETTE SMOKER

AOFAS SCORE PRESENTATION:
59.4 (range 40-66)
INVALIDATING ANKLE PAIN IN 5 OUT OF 6 PATIENTS

AIM OF THE STUDY: EVALUATE THE SAFETY AND EFFICACY OF PEMS IN THE TREATMENT OF IDIOPATHIC BONE MARROW OEDEMA OF THE TALUS.
PULSED ELECTROMAGNETIC FIELDS (PEMF)

8 HOURS A DAY (NIGHTTIME)

Pulsed Signal at a Frequency of 75Hz ± 5%

Signal length 1300μsec ± 200msec

FOLLOW UP AFTER 30 DAYS

MRI EVALUATION AT FOLLOW UP
• 5 OUT OF 6 PATIENTS HAD NO SIGNS OF BONE MARROW EDEMA AT THREE MONTHS
• SIGNS OF BONE MARROW EDEMA WERE VISIBLE IN 1 PATIENT, WHO WAS ASYMPTOMATIC

AOFAS SCORE PRESENTATION: 59.4 (range 40-66)

AOFAS SCORE 3 MONTHS: 94 (range 80-100)
ADVANTAGES:
• NO SIDE EFFECTS REPORTED
• APPARENTLY SHORTER TIME TO SYMPTOMS REDUCTION
• HIGH COMPLIANCE
(NO PREMATURE DISCONTINUATION OF THERAPY)

DISADVANTAGES AND LIMITS:
• NO CONTROL GROUP
• MODERATE THERAPY COST (ABOUT 20$ A DAY)
• LONG THERAPY REQUIRED
(5 PATIENTS FOR 1 MONTH, 1 PATIENT FOR THREE MONTHS)
• SMALL PATIENT GROUP
IDIOPATHIC BONE MARROW EDEMA OF THE TALUS IS A RARE CAUSE OF FOOT PAIN

PEMFS MAY FIND A ROLE IN THE TREATMENT OF TRANSIENT BONE MARROW ODEMA

PEMFS MAY REDUCE THE TIME TO SYMPTOM-REGRESSION

(5 OUT OF 6 PATIENTS HAD NO SIGNS OF ODEMA AFTER 3 MONTHS)

FURTHER STUDIES NEEDED
REFERENCES


