

MECHANISM OF ACTION OF INTRA-ARTICULAR RIFAMPICINE IN PATIENTS WITH HAEMOPHILIA

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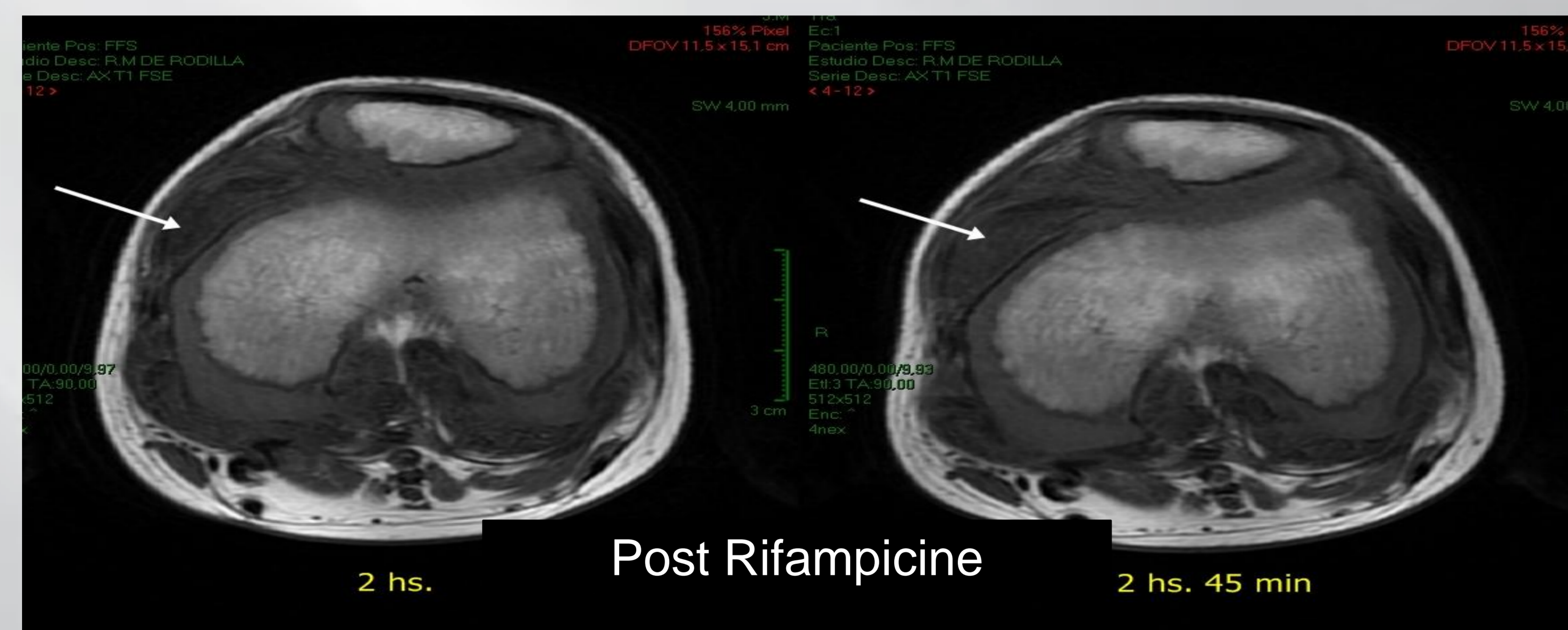
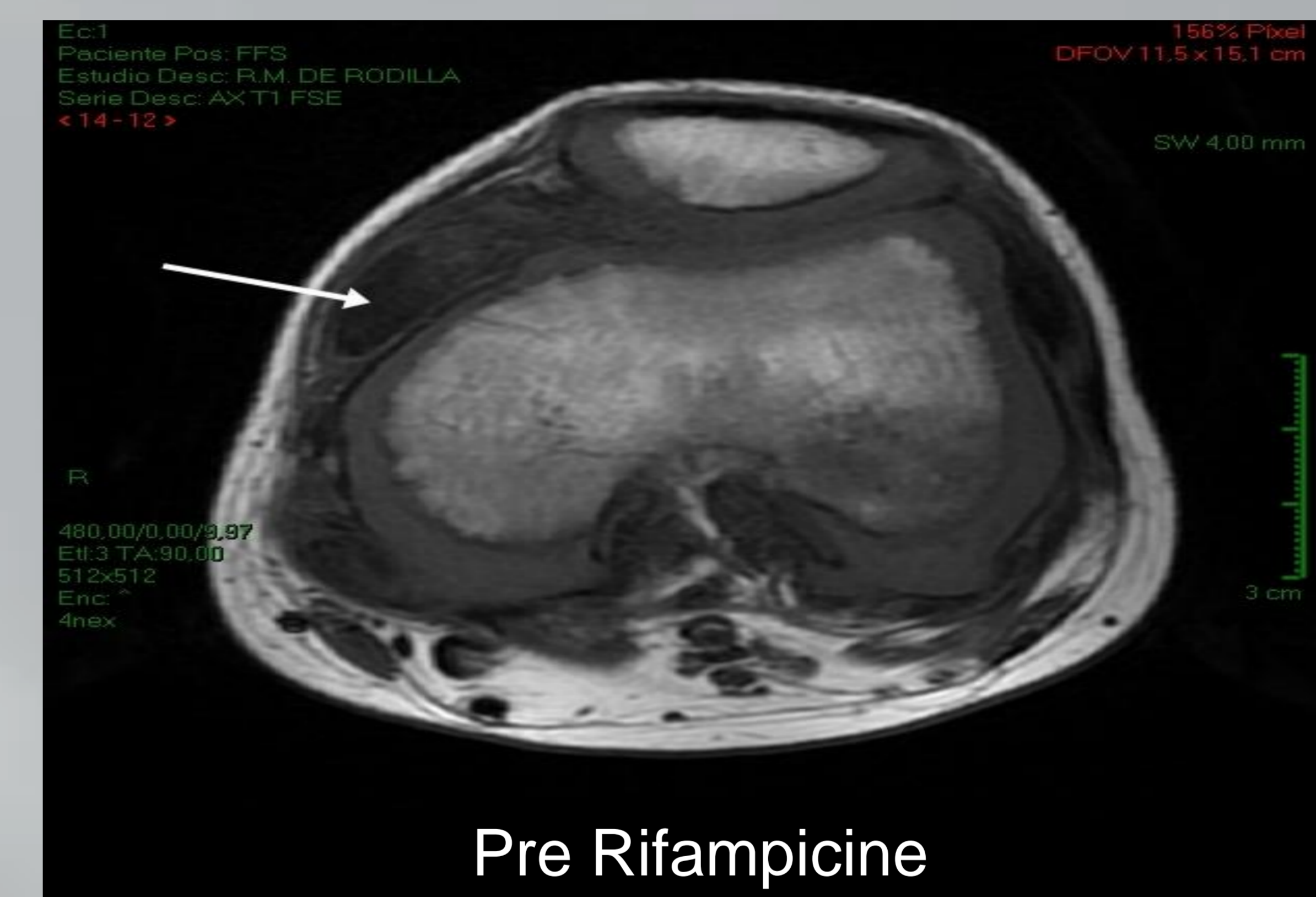
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Introduction: Magnetic resonance imaging (MRI) is a diagnostic technique more sensitive for the diagnosis of musculoskeletal complications associated with haemophilia. MRI has shown to be very sensitive to detect early signs of haemophilic arthropathy, early way to demonstrate and even than with conventional radiology clinical examination. In advanced stages of the disease there is a high correlation between the presence of bone lesions visible on plain radiographs and the presence of synovial and cartilage changes on MRI. Furthermore, alterations may be demonstrated in chronic synovitis on MRI in 50% of patients with normal radiological studies. It had been prove that rifampicine sinovectomy effectively reduced haemarthrosis and pain relief and also improved the range of motion in patients with haemophilic arthropaty. Rifampicine has proven effective for treatment of synovitis, but its mechanism of action is currently unknown. Our working group in an animal studio in rabbits has been shown to not produce subsynovial fibrosis.

Objective: The purpose of this work is the use of MRI to evaluate the biological action intra articular in patient with haemophilia suffering synovitis.

Methods: Two male patients with haemophilia A severe, one had inhibitors. Were treated for knee synovitis with chemical sinovectomy with rifampicine. One patient was 12 years old and the other was 6 years old. The knee MR protocol model included spin echo T1-weighted sequence in the axial and coronal planes and 3D spoiled-gradient echo, 2D gradient echo (merge) and turbo spin echo PD-weighted sequence in the sagittal planes prior to the injection of rifampicine and 2 hours later. The infiltration technique was divided in two steps. The first step was aspirate and measure the intra-articular blood volume and then infiltrate with that volume of rifampicine. For the first patient of 12 y.o. the volume was 20 ml and for the second patient was 12 ml. Photo 1 (white arrow)



Results: In the two patients we were able to demonstrate the change of iron valence in MRI. The comparison between the pre and post injection images shows increase of the signal intensity of the effusion on T1 weighted images, reflecting the presence of methemoglobin. Photo 2 (white arrow)

Conclusion: This study shows the early mechanism of action of rifampicine for haemophilic sinovectomy being a safe, inexpensive and reachable treatment option.

Bibliography

- * Caviglia HA, Fernandez-Palazzi F, Galatro G, et al. **Chemical synoviorthesis with rifampicin in haemophilia.** Haemophilia.2001 Jul;7 Suppl 2:26-30.
- * Wiedel JD. **Arthroscopic synovectomy: state of the art.** Haemophilia 2002 May;8(3):372-4.
- * Fernandez-Palazzi F, Rivas S, Viso R, et al. **Synovectomy with rifampicine in haemophilic haemarthrosis.** Haemophilia. 2000 Sep;6(5):562-5.