

Extracorporeal Shockwave in Hip Necrosis: Are combined therapies more effective than ESWT

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Introduction:

Extracorporeal shockwave therapy (ESWT), hyperbaric oxygen therapy (HBO) and alendronate were reported effective in early osteonecrosis of the femoral head (ONFH). Some studies reported that ESWT works better than the gold standard core decompression. This study investigated whether combined therapies are more effective than ESWT alone in early ONFH.

Methods:

Three comparison studies were conducted including: (1) ESWT vs. core decompression; (2) ESWT vs. combined ESWT and alendronate; and (3) ESWT vs. cocktail therapy (ESWT + HBO + alendronate). The evaluations included pain score, Harris hip score, radiograph and MR imaging. The primary end-point is the need for total hip replacement (THR).

Results:

23 patients (29 hips) treated with ESWT were compared with 25 patients (28 hips) treated with core decompression. The results showed better overall outcomes after ESWT than core decompression. THR was performed in 10% of ESWT group and 29% of surgical group. 25 patients (30 hips) treated with ESWT were compared to 23 patients (30 hips) treated with combined ESWT and oral alendronate. Comparable clinical results were noted in both groups at 2-year follow-up. THR was performed in 10% of ESWT group and 10% of combined group ($P = 1.000$). Another study compared 28 patients (50 hips) treated with cocktail therapy (ESWT + HBO + alendronate) with 35 patients (48 hips) treated with ESWT. The clinical results of both groups are comparable at two-year follow-up. THR was performed in 10% of cocktail group and 10.4% of ESWT group ($P = 0.946$).

Discussion:

It is surmised that combined therapies of 2 or 3 modalities may work better than single ESWT alone in early ONFH. However, the results of this current study failed to demonstrate the synergistic effects from combined therapies.

Conclusion:

ESWT is effective with or without the concomitant application of HBO and alendronate in early ONFH.