A randomized controlled trial on the effectiveness of Osteopathic Manipulative Treatment in reducing Pain and improving Quality of Life in elderly patients affected by osteoporosis

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BACKGROUND

- **In the elderly population, a decrease in bone mineral density (osteoporosis) is often associated with a decrease in Quality of Life (QOL) and an increase in self reported bodily pain.** *(Silverman S.L. 2005, Bianchi M.L. 2005)*
- **It has been estimated that the social cost for the Italian National Health System is € 6.000 per year for each patient with osteoporosis.** *(Nota 79 of Ministry of Health)*
- **This estimate does not include the social costs borne by families due to loss of autonomy.** *(www.ailafondazione.it)*

BACKGROUND

- **The worsening of QOL is not only associated with bone fractures, but also with pain, balance disorders and decrease of range of movement in elderly people affected by osteoporosis** *(Dhillon V. 2005, Oleksik A. 2000)*
- **Manual therapy, exercise training can reduce pain and disability, and increase QOL in these patients.** *(Bautmans I. 2010, Matsuda A. 2008, Bonaiuti D. 2002)*
- **The Osteopathic Manipulative Treatment (OMT) may be useful in a multidisciplinary health care approach for osteoporosis.** *(Gronholz M.J. 2008, Cavalieri T.A. 2000)*

AIM

- **The aim of this study was to investigate the effect of Osteopathic Manipulative Treatment on self reported pain and quality of life in an elderly population affected by osteoporosis**

METHODS

- **Randomized, controlled single-blind study.**
- **Patients were recruited from Geriatrics Department of Bassini Hospital.**
- **Patients with T-score > 8, acute fractures and with osteoporosis secondary to bone cancer were not included.**

METHODS

- **Patients were randomly assigned to 6 sessions (one per week) of OMT or equivalent number of Sham Manipulative Treatment (SMT).**

- **OMT: the treatment was determined on individual bases according to evaluation of symptoms and physical assessment.**
- **SMT: the sham treatment was designed to simulate a real manipulative treatment by performing a postural objective exam and an unspecific palpation of body skin with the patient lying in different positions.**

METHODS

- **Overall bodily pain was measured by a visual analog scale (VAS) at the beginning of each treatment session.**
- **The QOL was measured by QUALEFFO-41** *(Salaffi F. 2005, Lips P. 1999)* **at the beginning of the first and last treatment session.**

- **Data were analyzed using a two factor ANOVA (treatment x time) for repeated measures with an α level set at 0.05 using SPSS v.17 software**

RESULTS

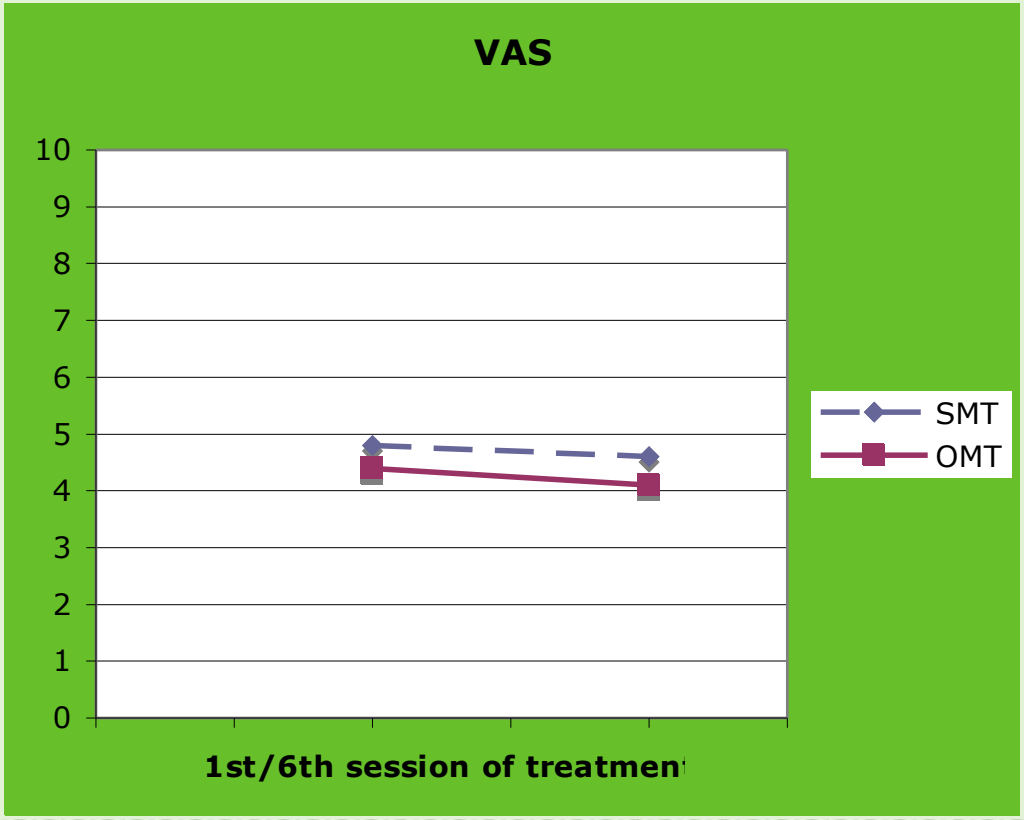
- **96 patients were recruited and 72 patients completed the study and were included in the statistical analysis.**

	OMT (n = 37)	SMT (n = 35)	*p*
Age	77,2 ± 5,3	76,8 ± 8,2	0,156
Sex (M:F)	(11:26)	(10:25)	
T-score	-4,5 ± 1,6	-5,5 ± 1,3	0,239

RESULTS

- **VAS $p = 0.454$**

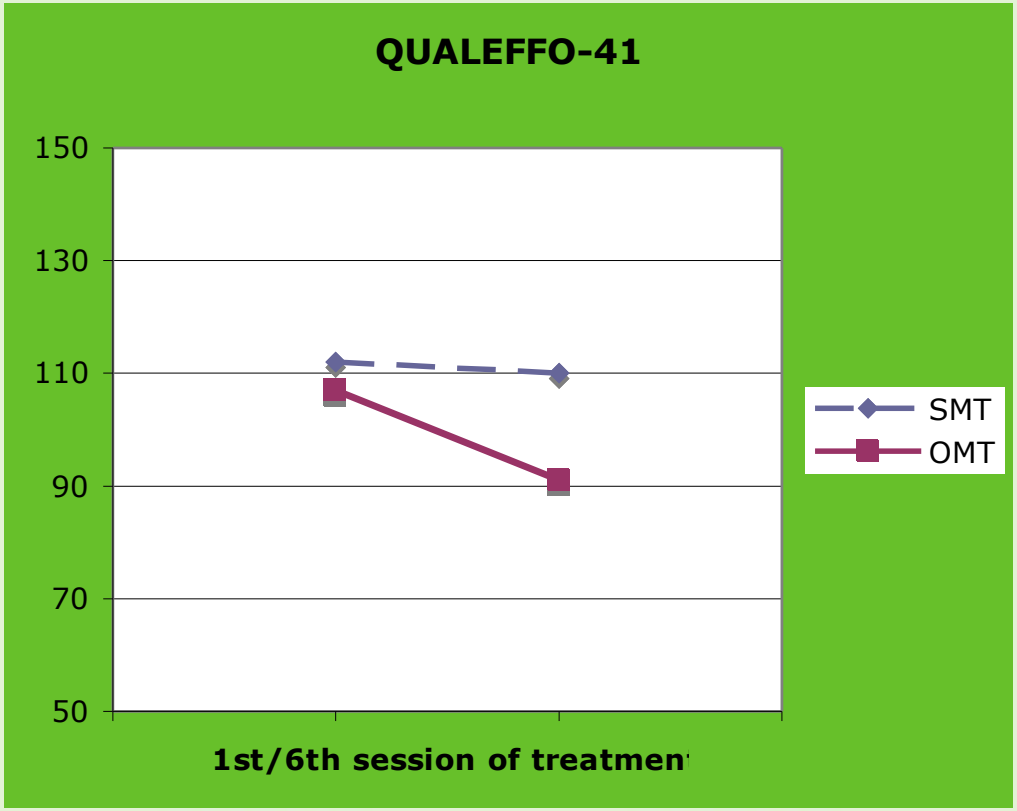
OMT1 = 4.4 ± 2.6, OMT6 = 4.1 ± 1.9,
SMT1 = 4.8 ± 2.5, SMT6 = 4.6 ± 2.7



RESULTS

- **QUALEFFO-41 $p = 0.001$**

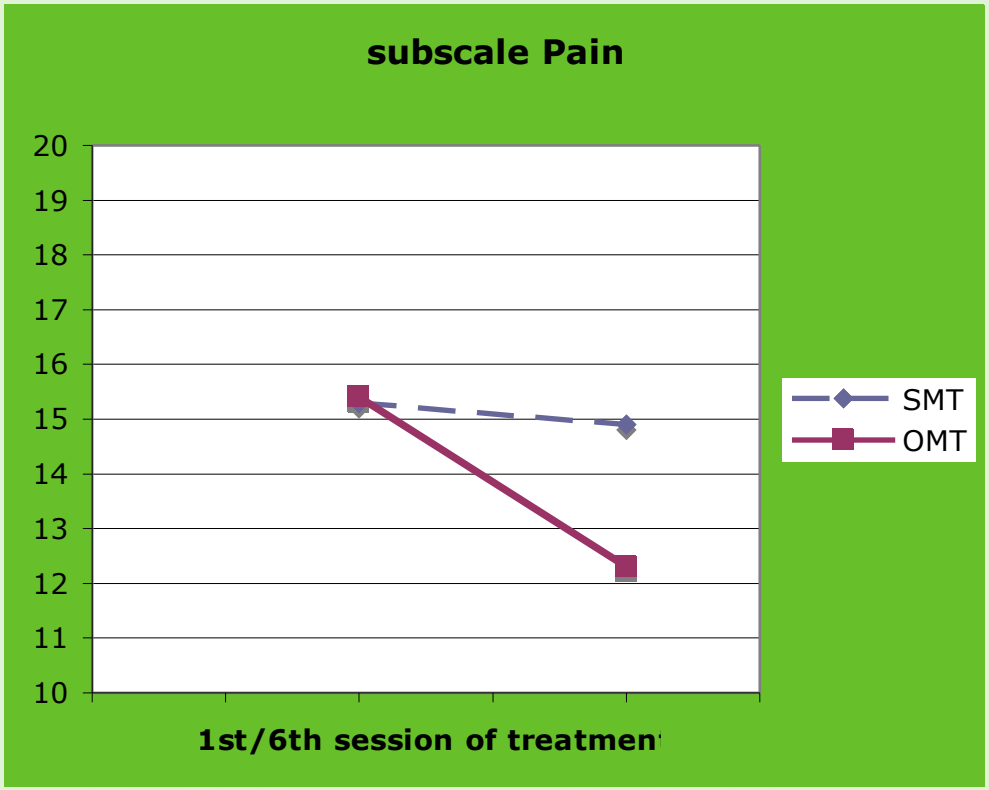
OMT1 = 107 ± 25, OMT6 = 91 ± 29
SMT 1 = 112 ± 27, SMT6 = 110 ± 31



RESULTS

QUALEFFO-41 subscale

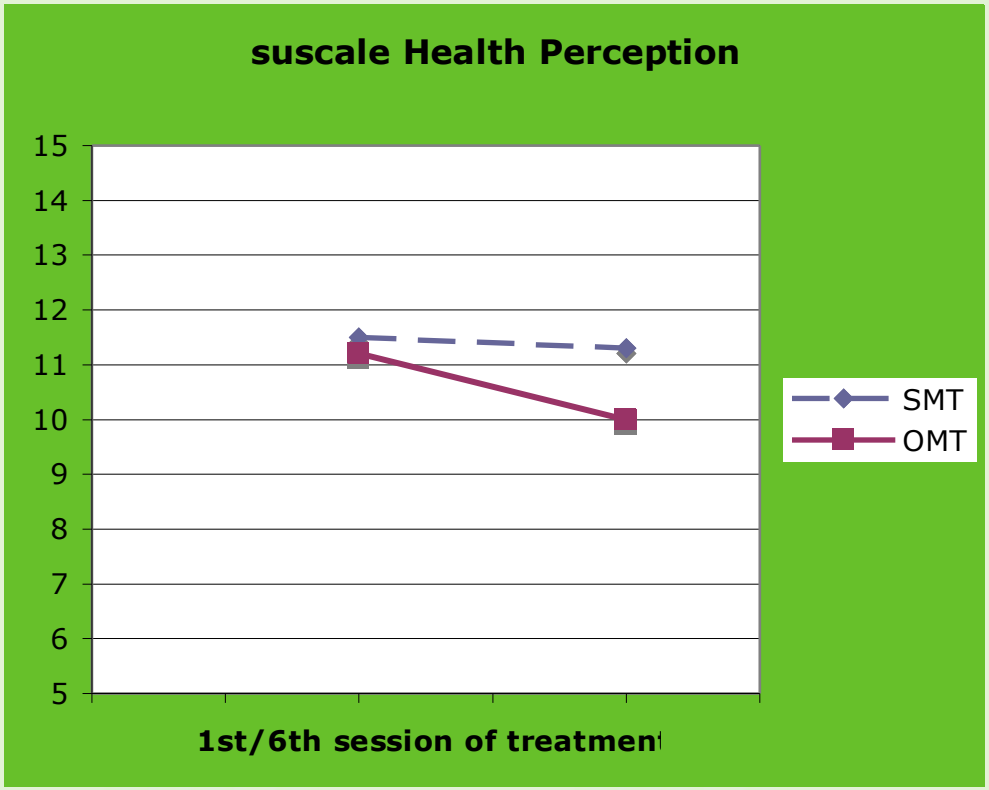
- **Pain $p = 0.003$**



RESULTS

QUALEFFO-41 subscale

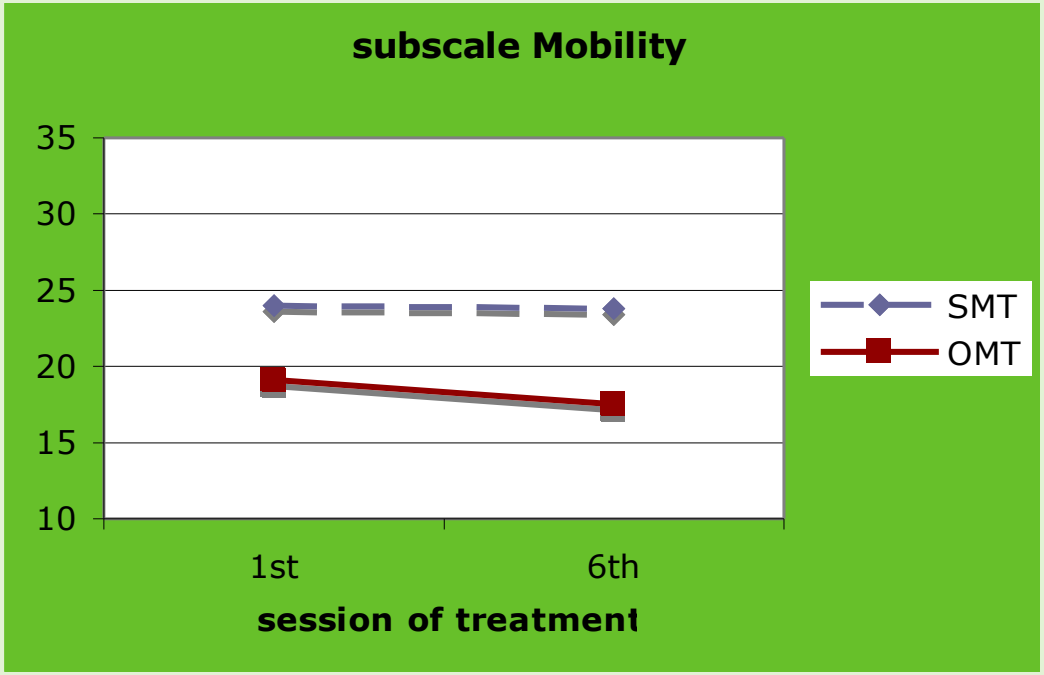
- **Health Perception $p = 0.005$**



RESULTS

QUALEFFO-41 subscale

- **Mobility *p* = 0.049**



RESULTS

QUALEFFO-41 subscale

- **Daily activities $p = 0.224$**
- **Housework $p = 0.315$**
- **Leisure $p = 0.138$**
- **Mental Function $p = 0.058$**

DISCUSSION

- ✓ **The results show the effectiveness of OMT in improving the Quality of Life after the 6 weeks of study.**

➔ **Improvement of QOL appears to be linked to reduce perception of pain and to improve perception of health.**

These results appear to confirm data shown by some studies on perception of health after OMT administered in both private practice and hospital. *(Licciardone J.C. 2002, Pomykala M. 2008)*

DISCUSSION

- ✓ **The difference between the two groups in the subscales of physical function of QUALEFFO-41 is not statistically significant.**

- ➔ **The difference between means in the two groups shows an improvement of physical functions after OMT especially with regard to the subscale of mobility.**

  This positive trend should be confirmed by a standardized objective assessment of physical function in a future study.

DISCUSSION

- ✓ **The results of pain evaluation are conflicting.**

  VAS does not show significant difference between the two groups, while the questionnaire data on pain are significant for a reduction in the OMT group.

➔ **This difference may depend on the type of assessment, because the VAS expresses data on quantity of pain while the subscale of QUALEFFO-41 on quality of pain.**

DISCUSSION

- **Furthermore only one single VAS was given to assess the patient's pain even if the recruited patients often presented a clinical state of polyarthralgias.**

  On the contrary, "pain" questions of QUALEFFO-41 are more specifically related to spinal pain.

  If this QUALEFFO specificity is true than our results are in agreement with several studies on the effectiveness of OMT for low back pain. *(Licciardone J.C. 2005)*

- **Finally it was difficult for patients to understand why and how to write on the VAS although great attention was given to explanation.**

GRAZIE!

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