

## 28. Quality Control of ESWT in the treatment of Non-Union fractures

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**Introduction:** Since December 1998 delayed and non-union fractures have been treated with ESWT on a regular basis in the AUVA Trauma Centre Meidling. Up to December 2009 a total of 1611 patients were treated and 70 parameters were documented for each patient. The data set includes demographic data, medical history, treatment parameters, side effects, and follow-up treatment as well as 3 and 6-month results. Since 153 (9.5%) patients were lost to follow-up, data for only 1458 patients is available.

**Methods:** Because the data were collected in a linked access database some important correlations can be made immediately. The database will be demonstrated during the presentation and the audience will have the opportunity to ask questions concerning age of the patients, age of the non-unions, treatment parameters, etc. in correlation to the outcome (3 and 6-month results).

For example,

**Question:** "What was the healing rate in patients over 80 years of age that received ESWT for their non-unions?"

**Answer:** n = 50 (14 male/34 female); mean age: 83.8 (range: 80-93); 47 fractures / 3 osteotomies; metaphyseal = 27 / diaphyseal = 23; healing rate after 3 months: 32 (64%); after 6 months: 42 (84%).

**Results:** The overall healing rate was 77% (1120). Only minor side effect, such as temporary superficial haematoma, petechial bleedings and reddening of the skin, were observed. None of them had a clinical impact and disappeared after 3 to 5 days without treatment.

**Discussion:** The quality control facilitated by collecting these data enabled us to optimize treatment parameters. The treatments were performed by a total of 25 trauma surgeons and there were no significant differences in the outcomes between the physicians.

**Conclusion:** These results prove that ESWT for the treatment of delayed and non-healing fractures is not only efficient and safe but has practically no learning curve and is easily reproducible.