

OP7

Comparison of Complications of off-loading methods (Total Contact Cast vs. removable cast Walker) with focus on osteomyelitis

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The application of different off-loading methods used for treatment of the diabetic foot could lead in several cases to a development of some complications, e.g. progression of local findings leading to the interruption of selected off-loading therapy or development of a new osteomyelitis (OM). The **aim** of our study was to compare the incidence of complications with focus on OM, which developed during the therapy performed by removable Total Contact Cast (r-TCC) and Removable Cast Walker (RCW). **Methods:** 99 patients with chronic neuropathic foot ulcers, acute Charcot osteoarthropathy and neuropathic fractures treated by r-TCC (mean age 53.3 ± 9.9 years, mean diabetes duration 15.9 ± 10.2 years, mean HbA1c $6.5 \pm 1.8\%$) and comparable 23 patients treated for the same indications by RCW (mean age 57.4 ± 12 years, mean diabetes duration 19.6 ± 9.9 years and mean HbA1c $7.3 \pm 2\%$, NS) in our foot clinic during the last 4 years were included into our study. OM was diagnosed by X-ray and laboratory markers of infection. The incidence of complications such as mycosis, new ulceration, pain and progression of local findings were assessed during the off-loading therapy. The benefit/risk ratio was defined as a relationship between number of healed OM and number of newly developed OM during selected off-loading therapy and the effect of r-TCC on benefit/risk ratio was compared with those find in patients treated by RCW. **Results:** The mean durations of therapy by r-TCC or RCW did not differ significantly between each other (8.3 ± 5.4 vs. 6.2 ± 4.2 months; NS). The incidences of all complications were not significantly different between the two groups of patients treated by r-TCC and RCW (mycosis 14.1 vs. 13%; new ulceration 36.4% vs. 30.4%; pain 3% vs. 8.7%, all NS). The most important serious complications such as the progressions of local finding leading to the interruption of r-TCC or RCW therapy were seen very rarely in both groups (12% vs. 22%, NS). Significantly higher healing of OM and lower development of a new OM were found in patients treated by r-TCC (20 patients-62.5% from 32 patients with previous OM and 6 patients-9.4% from 64 patients without previous OM; $p < 0.01$) in contrast to those treated by RCW (3 patients- 50% from 6 patients with previous OM and 2 patients- 11.8% from 17 patients without previous OM; NS). The benefit/risk ratio of healing and new development of OM was significantly higher in patients treated by r-TCC (3.3) compared to those treated by RCW (1.5; $p < 0.01$). **In conclusion**, the incidences of complications, even those leading to the interruption of off-loading therapy, were not significantly different in both study groups treated by r-TCC and RCW. However there was significantly higher successful OM healing by r-TCC compared to the RCW therapy.

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