Reviewer’s report

Title: Prediction of plantar pressure from clinical and radiological measurements in patients with diabetes

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Reviewer: Philip Roosen

Reviewer's report:

General comments:
- Congratulations to the authors!
- Very interesting and clinical relevant study.
- Discret. rev.- It could be useful to change ‘plantar pressure’ in ‘peak plantar pressure’ in the title because only the peak pressures are investigated in this study.

Specific comments: all minor essential revisions
- page 2: second sentence in methods: ‘barefoot’ instead of ‘bare foot’
- page 5: under patients: deformities are excluded: what are the criteria for exclusion based on orthopaedic deformities? Later in the study the authors mention the rate of toe deformity. This does not match with the former mentioned exclusion criteria on page 5.
- Page 5: under patients: Is limited joint mobility important in the exclusion criteria?
- Page 5: table 1: the mean value of HbA1c is rather high, which means that the majority of patients are not well regulated. This is just a remark and can not be changed, of course.
- Page 6: are you sure that the technical failure (exclusion of a number of trials) with the EMED system has not influenced the data you are using in this study?
- Page 6: Barefoot pressure measurement: why are the peak pressures measured and analysed in this study. Mean pressures and impulses could also be very harmful.
- Page 7: you mention twice criteria for scoring. It is unclear for readers which criteria fit to which test.
- Page 7: Orthopaedic assessment: the authors explain the exact position of the bissections for MTP 1 measurement. Why are these details about the ankle joint and the hallux valgus angle not mentioned?
- Page 8: The medial arch was subjectively classified: why has the navicular height, which is reliable, not been used?
- Page 10: Plantar pressure: change the last sentence perhaps into: Forefoot pressures were significant higher in patients with neuropathy, compared to patients without neuropathy for the whole forefoot, the MT-1 region and the MT-5 region (respectively 138 kPa, 173 kPa and 88 kPa higher).
- Page 11: clinical measurements: No differences with respect to ABI, toe pressure and passive ankle DF. What about VPT and the Valk score?
- Page 11: Callus formation and toe deformity: ‘Most callus formation was found’ better change into ‘Most important callus formation was...’
- Page 11 and 12: % of calcaneal alignment and arch height are not exactly 100% in total
- Page 12: Radiographic evaluation: ‘MT-head height’ has to be changed into ‘MT-5 base height’?
- Page 13: add into the first sentence: …and the ‘Valk score’ for three regions and the whole forefoot.
- Page 13: …resulted in the largest explained variance. Mention perhaps the exact amount of variance.
- Page 13 and 14: The previous proposed regression models possibly belong more in the discussion than here.
- Page 16: first sentence: A similar relationship…..previous studies. Where did you measure the soft tissue thickness on radiographic images?
- Page 16: Next paragraph: Some parameters obtained.......hallux alignment. I read before that there was no significant difference in arch height between NP and non NP. This does not match with the latter sentence.
- Page 16: first paragraph under regression models: Is R² considered as high or low and where is the limit?
- Page 16: bare foot -> barefoot (2x)
- Page 16: Why do the authors only use a regression model for MT-1?
- Page 19: last reference: Title between ().
- Page 22: Reference 62: gait and posture is written in capitals
- Table 2: Bare foot -> barefoot
- Table 2: *PNP- versus PNP + p<0.05 & **p<0.005 better change into PNP-versus PNP + *p<0.05 & **p<0.005
- Table 4: Motons index -> Mortons index?
- Table 4: an explanation (or figure?) about some measurements could be interesting for the reader.
- The table with the regression models: is it table 5 of figure 5???

Level of interest: An article of importance in its field

Quality of written English: Acceptable
**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that i have no competing interests.