SYNOPSIS

Name of Sponsor/Company: Medical University Vienna	Individual Study Table Referring to Part of the Dossier	*(For National Authority Use only)*
Name of Finished Product: Qutenza	Volume:	
Name of Active Ingredient: Capsaicin	Page:	

Title of Study:	Epidermal Nerve Fibre Density Reduction as a Function of Application Time of topical high-dose and low- dose Capsaicin
Investigators:	Prof. Dr. E. Knolle, Dr. M. Zadrazil
Study centre(s):	Medical University Vienna, Dept. of Anaesthesia, Intensive Care and Pain Therapy
Publication (reference)	
Studied period (years): 8 (date of first enrolment) 1. Aug.2012 (date of last completed) 3.April 2020	Phase of development: Phase IV trial
Objectives:	Evaluation of the effect of increasing application time of topically applied capsaicin on epidermal nerve fibres; To decect the degeneration and subsequent regeneration of epidermal nerve fibres after a capsaicin application
Methodology:	randomised, placebo-controlled, observer-blinded trial
Number of patients (planned and analysed):	twelve healthy volunteers (six female, six male); twelve planned and twelve analysed
Diagnosis and main criteria for inclusion:	healthy volunteers, non-pregnant
Test product product, dose and mode of administration, batch number:	Qutenza, Capsaicin 8% transdermal patch
Duration of treatment:	single treatment, one application of up to 120 minutes
Reference therapy, dose and mode of administration, batch number	Capsaicin 0.05% ointment as active comparator, administration to the skin

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Criteria for evaluation: Change of the density of epidermal nerve fibres (ENFD) before and after the capsaicin treatment

Efficacy: Evaluation of the effect of increasing application time with high-dose capsaicin on ENFD
Evaluation of the effect of increasing application time with low-dose capsaicin on ENFD

Safety: Topical application of capsaicin is a safe procedure. One side effect is the capsaicin application related local pain; cooling the skin should prevent this pain.

Statistical methods:

ANOVA

Summary - Conclusions

Efficacy Results:

For both capsaicin dosages ENFD-reduction one week following the application did not correlate with application-time. Following the administration of capsaicin 8% patch ENFD was significantly reduced (>60%) only in the 120-minutes application-area ($p<0.037$), in contrast to capsaicin 0.05% ointment ($p<0.487$), which indicated no significant reduction of ENFD at any point of time. Skin biopsies taken five weeks following the 120 minutes lasting capsaicin 8% treatment (14.8 IENF/mm) showed a 23.3% lower mean ENFD compare to baseline value (without treatment 19.3 IENF/mm) whereas biopsies taken five weeks following the 120 minutes lasting capsaicin 0.05% treatment (16.1 IENF/mm) showed no difference to baseline values (16.5 IENF/mm)

Safety Results:

All participants completed the full, intended 120-minutes lasting application of capsaicin 8% and capsaicin 0.05%. Overall AEs were mentioned by 10 of 12 study participants (83.3%). The most common reaction at the capsaicin application sites was burning pain during the treatment with a maximum pain of VAS=2, whereas 5 subjects reported application related pain in the capsaicin 8% sites and 8 subjects in the capsaicin 0.05% sites. None of the participants demanded rescue medication with pain killers.

Conclusion

Using IENFD-reduction as a parameter for the effect of topical capsaicin no application-time depending dose-effect relationship could be proven. Alternative ways of evaluating the effect of topical capsaicin are required to illuminate discrepancy of data.
In this trail we could confirm that local cooling of the skin nearly entirely prevents initial burning pain at capsaicin application sites.

Date of report

6th, April 2020 Markus Zadrazil