[OP144] DIABETIC FOOT ULCER CLASSIFICATION: IS IT A TOSS-UP?

Katrien Santema[1], Amsterdam, Netherlands , Ellie Lenselink[2], The Hague, Netherlands , Ron Balm[1], Amsterdam, Netherlands , Dirk Ubbink[1], Amsterdam, Netherlands

[1]*Academic Medical Center; Surgery*
[2]*Medical Center Haaglanden; Wound Expertise Center*

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Free Paper Session: Diabetic Foot 2

Aim: Accurate classification of diabetic foot ulcers is essential for inter-clinician communication, assessment of healing tendency, and determination of treatment options. Ulcer classification is performed by many different caregivers involved, but their agreement is unclear. The aim of this study was to assess the inter-observer agreement (IOA) of the most commonly used classification systems for diabetic foot ulcers; the Megitt-Wagner (MW) and the University of Texas (UT) systems.

Methods: We collected digital photographs of diabetic foot ulcers in various stages of healing. An expert panel selected 20 out of these photographs that represented the various categories and did not require in-vivo probing for correct classification. This final set was presented to doctors and nurses involved in wound care. They judged wound depths along the MW and UT systems. IOA was expressed as a unweighed kappa (κ) coefficient, including 95% confidence intervals (CI).

Results: Twenty doctors and 75 nurses of several Dutch hospitals judged the photographs. IOA of the MW and UT systems was moderate among observers. Overall, κ's were 0.42 (95% CI 0.41–0.42) for the MW system and 0.45 (95% CI: 0.44–0.45) for the UT system.

Conclusions: The MW and UT systems, although validated tools to classify diabetic foot wound depths, appear to be only moderately reliable when scored by multiple clinicians. Agreement is likely to be even lower when also the presence of infection and ischaemia are to be judged in the UT system. Hence, these systems should only be used in combination with other clinical information.

[OP145] WHY NOT COVER UP DIABETIC FOOT ULCERS? A SYSTEMATIC REVIEW

Katrien Santema[1], Amsterdam, Netherlands , Paul Poyck[1], Amsterdam, Netherlands , Dirk Ubbink[1], Amsterdam, Netherlands

[1]*Academic Medical Center; Surgery*

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Aim: Skin grafts and tissue replacements can be used to cover the skin defect in people with diabetic foot ulcers. We aimed to determine the effectiveness of tissue replacements in addition to standard care for diabetic foot ulcers.

Methods: We conducted a systematic review of randomised clinical trials. Two review authors independently undertook data extraction and assessed the quality of the included studies.

Results: We identified 15 studies with a total of 1488 randomised participants, all of which were generally at moderate to low risk of bias. Twelve studies compared a skin graft or tissue replacement with standard care, while three studies compared two grafts or tissue replacements. Most studies evaluated the use of a bioengineered skin substitute such as a cultured keratinocyte allograft.
Overall, skin grafts and tissue replacements increased the healing rate of diabetic foot ulcers compared to standard care (RR 1.50, 95% CI 1.30 to 1.73; RD 0.23, 95% CI 0.14 to 0.32; NNT 6, 95% CI 5 to 9). None of the studies that compared two kinds of skin grafts showed a significantly different effect on ulcer healing rates. No statistical differences were found for ulcer recurrence or time to complete healing.

Conclusions: Skin grafts and tissue replacements, used in conjunction with standard care, increase the healing rate of foot ulcers in people with diabetes compared with standard care alone. However, evidence of the effectiveness on the long term is lacking and cost-effectiveness is uncertain.

[OP146] IS THE USE OF THE IPSWICH TOUCH TEST VALID AND RELIABLE IN ROUTINE CLINICAL PRACTICE?

Pauline Wilson[1], Dublin, Ireland , Corey Gillen[2], Dublin, Ireland , Christine Kiernan[3], Dublin, Ireland

[1]*St James' Hospital; Department of Endocrinology*
[2]*St James' Hospital*
[3]*Amnch*

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Aim: The aim of this study is to consider the inter-rater reliability of the Ipswich Touch test (IpTT). This test is a subjective test for identifying neuropathy in patients with diabetes. Inter-rater reliability, inter-rater agreement, or concordance is the degree of agreement among raters. As the Ipswich Touch test is a subjective test the authors would like to investigate the reliability of this test in routine clinical practice.

Method: Participants were opportunistically recruited from the Diabetes centres of 2 hospitals. Two researchers completed the test on the same occasion in the same way for each participant. These results were then collated.

Results / Discussion: 90 patients were recruited from the Diabetes clinics in the 2 hospitals, 44 from site (a) and 46 from site (b). Site (a) showed a 95% concordance between testers, and site (b) showed a 74% concordance. This gave an overall concordance rate of 84% across both sites. Of the 16% of the participants where concordance was not reached, 10% of the results led to a different risk status. Overall this gives a 96% concordance rate in the analysis of risk status across the 2 sites.

Conclusion: The researchers feel that given a total concordance rate of 96% the Ipswich touch test is a valid and reliable tool in the completion of base line diabetic neuropathy screening for assigning risk categories of patients with diabetes. Further investigation is warranted to consider concordance in the IpTT, when compared to other methods of neurological testing.

[OP147] A COHORT STUDY OF DIABETIC PATIENTS AND DIABETIC FOOT ULCERATION PATIENTS IN CHINA

Fu Xiao-Bing[1], Bei-Jing, China , Yu-Feng Jiang[1], Bei-Jing, China , Xue-Mei Wang[2], Hohhot, China , Lei Xia[1], Bei-Jing, China , Zhangrong Xu[3], Bei-Jing, China , Xing-Wu Ran[4], Chengdu, China , Li Yan[5], Guangzhou, China , Qiu Li[6], Harbin, China , Zhaohui Mo[7], Changsha, China , Zhaoli Yan[8], Hohhot, China , Qiuhe Ji[9], Xi'an, China , Qiang Li[6], Harbin, China

[1]*Chinese Pla General Hospital; Wound Healing Unit*
[2]*The School of Public Health of Inner Mongolia Medical College*
[3]*Chinese Pla General Hospital; Diabetic Center*
[4]*Huaxi Hospital of Sichuan University*
[5]*Sun Yat-Sen Memorial Hospital of Sun Yat-Sen University*
[6]*The Second Affiliated Hospital of Harbin Medical University,*
[7]*Third Xiangya Hospital, Central South Univety*
[8]*The Affiliated Hospital of Inner Mongolia Medical College,*
[9]*Xijing Hospital of Fourth Military Medical University*

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Aim: To determine the annual incidence and clinically relevant risk factors for foot ulceration in a large cohort study of diabetic foot ulcer (DFU) patients and diabetes mellitus (DM) patients in China.

Methods: To investigate a cohort of 1333 patients comprising 452 DFU patients and 881 DM patients, who underwent foot screening, physical examination and laboratory tests in eight hospitals. The patients were assessed at baseline in terms of their demographic information, medical and social history, peripheral neuropathy disease (PND) screening, periphery artery disease (PAD) screening, assessment of nutritional status and diabetic control. One year later, the patients were followed up to determine the incidence of new foot ulcers, amputation and mortality. By univariate analysis, statistically significant differences were found in age, location, gender, living alone (yes/no), occupation, smoking, hypertension, PND, PAD, nephropathy, retinopathy, cataracts, duration of diabetes, Glycosylated Hemoglobin A (HbA1c), fasting plasma glucose level, postprandial blood glucose level, insulin level, blood urea nitrogen, creatinine, cholesterol, triglyeride, high density lipoprotein (HDL), serum albumin, white blood cell, and body mass index (BMI). A binary logistic regression model was used to examine which of these risk factors were independent risk factors for foot ulceration.

Results: A total of 687 (51.5%) of the 1333 patients were followed up for an average of 12 months; there were 458 DM patients and 229 DFU patients. A total of 46 patients died during the follow-up period; 13 were DM patients, and 33 were DFU patients. Of the 641 patients, 445（69.4%） patients were DM patients, and 196（30.6%）were DFU patients. At follow-up, 36/445 DM patients (8.1%), and 62/196 DFU patients (31.6%), developed new ulcers; 10/196 DFU patients underwent an amputation. The annual incidence of ulceration for DM patients and amputation for DFU patients were 8.1% and 5.1%, respectively. The

annual mortality of the DM patients and DMF patients were 2.8% and 14.4%, respectively. A binary logistic regression model was used to examine which risk factors were independent risk factors for foot ulceration during the follow-up period, and the final results showed that nephropathy (odds ratio 2.32), insulin level (odds ratio 3.136, 2.629), and decreased HDL (odds ratio 0.427) were associated with increased risks for foot ulceration.

Conclusions: Complications of diabetes affecting the feet represent a serious problem in China. The incidence of foot ulcers and amputation are much higher than that of Western countries. More intensive surveillance and aggressive care following a diagnosis of DFU and earlier referral to specialty care might improve the patient outcome.

[OP148] THE ASSOCIATION BETWEEN SKIN AUTOFLUORESCENCE AND VASCULAR COMPLICATIONS IN CHINESE PATIENTS WITH DIABETIC FOOT ULCER: AN OBSERVATIONAL STUDY DONE IN SHANGHAI

Lu Shuliang[1], Shanghai, China

[1]*Shanghai Burns Institute, Rui Jin Hospital, Shanghai Jiao Tong University, School of Medicine*

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Free Paper Session: Diabetic Foot 2

Objective: The tissue accumulation of advanced glycation end products (AGEs) can be noninvasively assessed as skin autofluorescence (SAF) by the AGE Reader^{TM} device. We aimed to detect the association between SAF and diabetes associated vascular complications in diabetic foot ulcer (DFU) patients engaged in this study. This cross-sectional survey consisted of 118 consecutive hospitalized diabetic foot patients. The diabetic microvascular (retinopathy, nephropathy, and neuropathy) and macrovascular refer to coronary heart disease (CHD), cerebrovascular disease (CVD) or peripheral vascular disease (PAD) complications were evaluated, and then they were divided into different subgroups based on the assessment of vascular complications. As the results, the mean SAF value was 2.8±0.2 AU. SAF was significantly associated with diabetes duration and blood urea nitrogen (BUN) (R^2=62.8%) ($P < 0.01$). Moreover, in the logistic regression analysis, SAF was significantly associated with retinopathy (odds ratio (OR) =40.11), nephropathy (OR=8.44), CHD (OR=44.31), CVD (OR=80.73), and PAD (OR=5.98E9). In conclusion, SAF, reflecting tissue accumulation of AGEs, is independently associated with the presence of vascular complications in DFU patients.

[OP149] IMPACT OF FAMILY SUPPORT ON THE EFFECTIVENESS OF FOOT CARE EDUCATION IN OLDER PATIENTS WITH DIABETES AND PERIPHERAL SENSORY NEUROPATHY

Luo Man[1], Wuhan, Hubei province, China

[1]*Wuhan Third Hospital*

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Purpose: The purpose of this study is to investigate the impact of family support on effectiveness of education in older patients with diabetes.

Method: A quasi-experimental interrupted time series with comparison group design was conducted. Finally, 75 patients, according to their level of family support were randomly assigned to the two intervention groups and the two control groups respectively. The patients in two intervention groups received a 30 minutes education session individually, and one family member of each patient of the intervention group with high level of family support was educated at the same time. The Nottingham Assessment of Functional Foot care (NAFF) and The Multidimensional Scale of Perceived Social Support (MSPSS) were used to evaluate the educational effect and level of family support.

Results / Discussion: At the six months follow-up, the patients in two intervention groups demonstrated a significant improvement in NAFF and the intervention group A indicated better performance over time in NAFF and MSPSS.

Conclusion: The high level family support enhanced effectiveness of education and sustained health foot care behavior. The findings of this study are important for nurses and diabetes educators to improve the teaching and improve foot care of the elderly with diabetes.