

ANNUAL CONFERENCE
& EXHIBITION



ROYAL COLLEGE
of PODIATRY



PODIATRY 2022

STEP INTO THE FUTURE

ACC
LIVERPOOL

7-9 JULY
[RCPOD.ORG.UK/RCPOD22](https://rcpod.org.uk/rcpod22)

ABSTRACTS

Podiatry 2022 Oral Presentations

Jewel in the Crown

A biomechanical investigation of children with Type 1 Diabetes

Alfred Gatt

University of Malta

Aims

There is limited evidence on the biomechanical effects of Type 1 Diabetes Mellitus (T1DM) on children's feet. This study aimed to determine if T1DM children aged between 10-16 years have altered foot structure and gait parameters when compared with same-aged children without any medical conditions.

Methods

A non-experimental, case-control study was conducted. Thirty-four ($n=34$) participants were recruited and assigned into Group A (healthy children) and Group B, T1DM children. Participants underwent a clinical biomechanical examination followed by instrumented gait analysis using the Oxford Foot Model to investigate foot segment motion.

Results

T1DM children demonstrated more dermatological lesions and structural foot abnormalities including claw toes (33.3%), hammer toes (22.2%) and hallux abducto-valgus (11.1%) than their healthy counterparts. Gait analysis results indicate a significant difference between the two groups at the hindfoot to tibia angle at heel strike and toe-off, suggesting limited ankle joint motion.

Conclusion

Children with T1DM demonstrated a higher frequency of structural foot pathologies than healthy children possibly associated with limited ankle sagittal plane movement. Screening is warranted to identify and manage these conditions early in order to reduce their risk of more significant foot problems associated with DM in adulthood.

C8.1

A systematic review and meta-analysis of surgical treatments for ingrowing toenails

Victoria Exley¹; Katherine Jones¹; Grace O'Carroll¹; Jude Watson¹; Mike Backhouse²

¹University of York; ²University of Warwick

Introduction

Ingrowing toenails are common and represent a substantial proportion of the professions' caseload. We aimed to evaluate current evidence for the surgical treatment of ingrowing toenails.

Methods

Five electronic databases (MEDLINE, Embase, Cochrane Central Register of Controlled Trials (CENTRAL), CINAHL, and Web of Science) were searched from inception to January 2022 for randomised controlled trials (RCTs) that evaluated surgical treatments for ingrowing toenails. Studies were eligible if they were RCTs comparing surgical procedures, or surgery to non-surgical interventions. Two reviewers independently screened, extracted data and assessed the risk of bias using the Cochrane Risk of Bias (RoB 2.0) tool. Data were meta-analysed using Review Manager Web (RevMan Web, The Cochrane Collaboration) for the primary outcome of recurrence. This review was registered on PROSPERO (CRD 42021251938).

Results

We included 36 studies (31 reported number of participants (n= 3034), 5 reported results for number of nails or nail edges (n= 614)). Planned meta-analyses of surgical or chemical matrixectomy Vs. conservative care were not possible due to differing definitions of 'recurrence' for each intervention. Eleven trials (506 participants) compared chemical Vs surgical matrixectomy and meta-analysis found no evidence of a difference in rate of recurrence (RR 0.75 [95% CI 0.46 to 1.21]). Three trials (194 participants) comparing surgical matrixectomy with other techniques (laser & electrocautery) also found no evidence of difference (RR 1.61 [95% CI 0.88 to 2.95]).

Discussion

Despite being a common procedure, the evidence to inform clinical decision making in nail surgery is poor. Surgical techniques, definitions, choice of outcome measure, and follow up times were highly variable, and data was often poorly presented thereby preventing further meta-analysis. The combined evidence does not favour one form of nail surgery over another, or surgical over conservative care. Future high-quality research is urgently needed, and should include patient reported outcomes.

C8.2

A mixed methods exploration of stakeholder beliefs about environmental sustainability in podiatric practice: "show me how and I'll do it"

Kathryn Longstaff¹; Edward McIntyre¹; Lindsey Cherry²

¹University of Southampton; ²University of Southampton & Solent NHS Trust

Introduction

Environmental sustainability within healthcare is highlighted as an important global issue requiring collective multi-professional attention. To date, there is limited research exploring sustainability within Podiatry.

Methods

An online survey was distributed via the Royal College of Podiatry membership enews, with snowball cascading encouraged. Respondents were invited to indicate willingness to participate in a subsequent focus group (FG). FG members were sequentially selected for participation, from each stakeholder group, until the overall sample size was achieved or all positive respondents were invited.

Results

75 complete survey responses were included; 59% private practice role, 29% NHS practice role, 5% managerial, education or research role, 4% student, 3% manufacture, distribution or procurement role. 93.3% of respondents indicated that they thought sustainability within Podiatry was an important topic. 73% thought the topic was important to their employer/ for their business. Respondents identified increased cost as a barrier to sustainable practice, noting a lack of tools to evaluate comparative costs. Conversely, opportunities to enhance sustainability included raising awareness, providing signposting or education, and providing tools or clinical guidelines.

The FG, (n=7), resulted in similar themes to those identified by survey respondents. 11 recommendations were generated and the top four of equal importance were prioritised: 1. development of educational resource, 2. development of tools to evaluate carbon footprint measurement/other indicator of sustainability impact at scale or in single practice settings, 3. development of accreditation schemes/ professional recognition, 4. development of workforce signposting about small-scale opportunities for change.

Discussion

There was agreement that sustainability within podiatric practice is an important topic. Overall, the thematic construct of "show me how and I'll do it" reflected a consistent viewpoint adopted across stakeholder groups. The prioritised

recommendations could be used to inform future work. The patient/public perspective should be considered, and their omission is a limitation of this work.

C8.3

Telewound care a boon for patients with diabetic foot ulcers during the pandemic

Sanjay Seetharama Sharma

FootSecure

Purpose

DFU in India takes 12 - 52 weeks to heal¹. Patients' visit healthcare facilities 20-50 times for wound dressings during those weeks. During a pandemic, 90% of healthcare facilities were repurposed for COVID-19 patients², making it impossible for the DFU patients to avail care. FootSecure adopted TSHWC to provide wound care, enabling amputation prevention.

Methods

Modified Diabetic Foot Triaging Protocol (DFTP)³. Existing and new patients with an active ulcer were staged across Stable, Guarded, Serious and Critical. Ulcer images were analyzed, and clinicians provided TSHWC to 112 patients who had access to smartphones with the internet. Patients got to review their wound status by clinicians over video call and document the wound through existing messaging applications and later with a mobile WCCDSS# application "Wound360" developed for this purpose. Patients with wounds under stable and guarded, received tele consults and monitoring. Categorizations were revised every week during video consult.

Results

During April - October 2020, 132 wounds across 112 patients were treated based on triaging protocol and usage of Messaging Application and Wound360 (CDSS Mobile Application for Wound Care). During the first tele consult of 112 patients, 9 were staged critical, 21 serious, 59 guarded, and 23 stable.

It was observed that wounds of 60% of the patients wound condition improved, 22% remained unchanged (of which 16% were categorized stable at the start), and wounds of 11% of the patients deteriorated. In addition, 5% underwent surgical intervention. Therefore, mortality was 1.8% due to COVID-19.

2109 tele consults conducted for 112 patients (1001 video/telephonic consults and 1108 image analysis). Average video/telephonic consult time – 15min. Time taken for image analysis – 4min.

Conclusions

Telemedicine (TM) has proven its impact once again in the Wound Care scenario, where in the wound condition of 82% of the patients either improved or remained stable during the intervention. Legalization of TM practice during the pandemic, reasonably priced mobile phones with image & video capture features has made tele wound care feasible and effective.

C8.4

Innovation into action: Using the RADAI-F5 to target the window of opportunity for maintaining foot health in rheumatoid arthritis

Anika Hoque¹; John Tougher²; Robert Field³; James Dale⁴; Scott McNab⁴; Adele Osbourne⁵; Martijn Steultjens¹; Diane Dickson¹; Gordon Hendry¹

¹Glasgow Caledonian University; ²NHS Greater Glasgow and Clyde; ³Dorset HealthCare University Foundation Trust; ⁴NHS Lanarkshire; ⁵NHS Fife

Introduction

Foot pain and disability are common in rheumatoid arthritis (RA). While foot Patient-reported Outcomes (PROMs) are recommended for capturing foot health status and promoting outcome-driven care, their use is infrequent due to the limited time available to clinicians in busy clinics. Despite musculoskeletal ultrasonography being more specific than

clinical examination for detecting RA disease activity, it is not routinely utilised due to the need for specialist training, cost of scans and scan duration. Consequently, patients often report unmet foot care needs. The RADAI-F5 offers a quick, simple and valid alternative to capturing foot disease activity and is currently being used in NHS Podiatry Services.

Innovation

The RADAI-F5 is a five-item PROM for assessing self-reported localised foot disease activity. The RADAI-F5 facilitates outcome-driven therapy congruent with the RA treat-to-target paradigm. The RADAI-F5 functions as a screening tool for the early detection of foot disease activity, can trigger early referrals to the appropriate health care practitioner, guide management, promote education and facilitate patient-clinician communication. Additionally, this PROM is beneficial for remote consultations to highlight patients needing urgent appointments.

Impact

By utilising the RADAI-F5, clinicians can employ a more outcome-driven model of foot care that emphasises patient-centred therapy and collaborative decision making, ultimately increasing patient satisfaction. The RADAI-F5 can be used in conjunction with clinical examination and ultrasound imaging to aid early detection of foot disease activity. Additionally, the RADAI-F5 may aid in the management of foot arthritis by distinguishing between inflammatory and mechanical disease and providing appropriate treatment modalities based on risk classification. Members of the multidisciplinary team utilise the RADAI-F5 to facilitate early referrals and improve interdisciplinary communication in accordance with the treat-to-target paradigm. The RADAI-F5 has the potential to be a fundamental driver of RA foot care, resulting in earlier diagnosis; faster, targeted treatment; improved outcomes and patient satisfaction.

C8.5

Recruiting research participants during the Covid 19 pandemic: comparison of face-to-face and postal questionnaire recruitment

Jennifer Williams¹; Richard Collings¹; Joanne Paton²

¹Torbay and South Devon NHS Foundation Trust/University of Plymouth; ²University of Plymouth

Introduction

Onset of the Covid-19 pandemic initially saw most research activities suspended. Similarly, the provision and delivery of NHS Podiatry services changed, with many services only providing in-person appointments to individuals with ulceration or at high risk of ulceration. When research activities resumed, these changes to service provision had implications for recruitment strategies. We compare the success of two recruitment strategies (face-to-face and postal) for a cross-sectional, epidemiological study investigating patient activation measure and diabetes foot risk status, for adults with diabetes.

Method

All potential study participants were provided with identical study document packs including an invitation letter, patient information sheet, consent form and Patient Activation Measure questionnaire. The target sample (n=320) consisted of patients equally distributed between the four categories of diabetic ulcer risk (n=80). Potential participants were identified and approached via two methodologies. Firstly, convenience sampling by trained clinicians, against inclusion/exclusion criteria, from a face-to-face NHS routine podiatry clinic. Secondly, electronic departmental databases were screened for potential participants meeting the inclusion/exclusion criteria and the participant pack sent via the post. Return of study documents for all participants was either at their next appointment or via post.

Results

A total of 161 potential participants were provided with a document pack. Of the 65 provided by post 30% were returned, whilst 56% of the 97 provided face-to-face were returned. The actual recruitment rate is 4/week, lower than the estimated 13/week.

Discussion

Whilst the recruitment strategy provided multiple routes, rates did not reach target. Barriers to clinical recruitment included staff absence and lower priority patient cancellation. Postal recruitment was hampered by inaccurate computer records failing to highlight low-risk patients. In light of these findings, the strategy has been reviewed, with

recruitment period extension, focusing on face-to-face and targeting specific clinics to increase returns from individuals at low-risk of ulceration.

C8.6

An investigation of the long term impact of the COVID-19 pandemic on the education and clinical development of Podiatry students in Northern Ireland

Jill Cundell; Sonyia McFadden; Joanne Marley; Catherine Hanratty; Sharon Guille; Paul Shepherd; Jean Daly Lynn; Ciara Hughes

Ulster University

Introduction

The disruptive effects of the COVID-19 have impacted on almost all sectors of our society. Higher education is no exception, COVID-19 has had significant impact on the education and clinical placement of students since March 2020. The pandemic resulted in universities having to adapt to online/remote delivery of lectures whilst continuing to facilitate clinic placements. This study explored the impact of COVID-19 on podiatry education.

Methods

A Qualtrics® survey was distributed to all students in the School of Health Sciences at Ulster University, Newtownabbey. The survey was distributed at three timepoints (TP) to see how perceptions changed. TP 1- October 2020, TP 2- December 2020, TP 3- April 2021. Information was gathered on demographics, individual experiences clinically, academically and personally. Analysis was performed using SPSS.

Results

24, 17, 15 students respectively from across three years of the programme completed the survey at three different TP's. By TP3 students had adapted to synchronous and non-synchronous remote learning with 3 students reporting they were happy to continue with online learning and 4 stating they would like a combination of face to face and online teaching. Overall students reported COVID-19 had a negative impact on teaching and learning after completion of one academic year. For those who completed clinical placements, students reported positive if somewhat limited experiences with 2 students reporting their confidence had increased as they had seen some difficult and challenging cases, enabling them to cope in difficult circumstances

The pandemic also impacted upon their personal health and wellbeing although no student reported having had Covid - 19 and 3 students now viewed their choice of career as a health care professional negatively.

Conclusion

The majority of students are keen to get back into university for teaching delivery but would like blended learning with some synchronous online delivery maintained in the post COVID-19 world.

D5.1

Risk factors differ for localised and non-localised foot pain in people aged over 50 years

Lindsey Cherry¹; Georgia Ntani²; Stefania D'angelo²; Karen Walker-Bone²

¹University of Southampton & Solent NHS Trust; ²MRC Lifecourse Epidemiology Centre

Introduction

Previous research suggests that multisite pain may have different risk factors and need different management than localised pain. However, there are few data about Foot and Ankle Pain (FAP) occurring with pain at other anatomical sites.

Methods

Health and Employment After Fifty is a longitudinal population-based cohort, inception 2013 to investigate health and retirement. At follow-up two years later, people completed a full-body pain mannequin including the ankles/feet. Mannequins were coded: FAP only (localised FAP); FAP with pain at other sites (non-localised FAP); pain elsewhere but not FAP; and no pain. Pain data was collected over three consecutive years. The distribution of painful sites was ranked according to response frequency and compared between groups with and without FAP. Risk factors were explored using Poisson regression, with random intercept for clustering within individuals, for localised FAP, non-localised FAP, and pain not involving FAP.

Results

7,038 people were included; n=145 had localised FAP, n=1095 had non-localised FAP, and n=979 had pain not involving FAP. In the presence of FAP, the distribution of multi-site pain changed from predominantly in the lower back (26.1-28.2%), neck (17.3-19.3%), or knees (15.1-17.7%), to predominantly in the knees (47.8-49%) and lower back (49.6-50.5%).

Obesity was a significant risk factor for localised and non-localised FAP (RR1.58, 1.24-2.02; RR1.32, 1.20-1.45 respectively). People with non-localised FAP were also significantly more likely to be struggling financially (RR1.1, 1.00-1.23), have poor self-rated health (RR1.36, 1.24-1.48), somatising (RR1.17, 1.06-1.30), depressed (RR1.19, 1.09-1.29), and high alcohol consumption (RR0.86, 0.77-0.97) compared to people with pain not involving FAP.

Discussion

Localised and non-localised FAP do not share the same risk factors and as such may need to be considered differently; non-localised FAP shares similar biopsychosocial risk factors to those for complex multi-site pain whereas the main risk factor for localised FAP is obesity.

D5.2

Superficial Tissue Swabs versus Deep Tissue Samples in the detection of microbiological profile of Infected Diabetic Foot Ulcerations

Cynthia Formosa; Alfred Gatt; Frances Camilleri Attard

University of Malta

Aim

To determine the most accurate microbiological test for the detection of micro-organisms in infected diabetic foot ulcerations in people with type-2 Diabetes.

Methods

For 20 eligible patients, a superficial tissue swab and a deep tissue sample were taken at a Diabetes out-patient's Podiatry Clinic. Two specimens were collected from each wound after the wound had been cleansed using sterile saline and gauze and debrided using a sterile scalpel. Infected foot ulcerations were graded according to the Wagner's classification. Streaking for isolation on an agar plate was used for bacterial isolation. In order to obtain well-isolated discrete colonies, the quadrant streak technique was used in the laboratory. The streaked plate was incubated at 37 °C for 24 hours.

Results

Superficial swabbing allowed for identification of 0 microorganisms in 10% of the samples, 1 microorganism in 5% of the sample and 2 microorganisms in 85% of the samples collected. The deep tissue samples were able to detect 0 microorganisms in 5% of the sample, 1 microorganism in 60% of the samples, 2 microorganisms in 30% of the samples and 3 microorganisms in 5% of the samples collected during the study. This study found a significant difference [$p=0.028$] between the two different samples.

Discussion

Deep tissue swabbing might be more sensitive than superficial tissue swabbing in detecting the number of isolates present in diabetic foot ulcerations. Further studies are warranted in this area to suggest the most accurate method to detect the correct microbial load when swabbing different types of diabetic foot ulcerations to commence prompt and accurate antibiotic therapy to avoid diabetic foot complications including osteomyelitis and amputations. This is clearly still a matter of debate on how to detect wound infection, particularly in chronic wounds.

D5.3

Implementation of hydrosurgical debridement in multidisciplinary team diabetic foot clinics within the NIHR funded MIDFUT study

Helena Meally¹; David Russell²; Elizabeth McGinnis³; Nikki Dewhurst²; Rachael Gilberts³

¹Birmingham Community Healthcare NHS Foundation Trust; ²Leeds Teaching Hospitals NHS Trust; ³University of Leeds Clinical Trials Research Unit

Introduction

Hydrosurgical debridement (HD) is one of three advanced therapies being investigated in the NIHR funded MIDFUT study, looking at the treatment of hard to heal diabetic foot ulcers (DFUs). This therapy is most routinely used in a theatre setting and was not in common use in DFU outpatient clinics prior to the trial commencing. We have developed a training package and guidelines to ensure successful implementation and safe use in a clinic setting; providing an opportunity for development of clinical skills and enhanced patient treatment options.

Methods

Site feasibility screening includes the suitability of clinic room with an environmental assessment according to individual organisations' infection control specifications and adaptations made if appropriate.

Procurement processes have been established to access additional equipment.

Staff have received training sessions including practical experience using simulated debridement (organic tissue substitutes). Technical support and supervision has been given during initial delivery of the treatments. A training video has been developed.

Results

Protocols and standing operating procedures have been developed and shared with participating centres. Risk assessments have been performed and equipment has been sourced. Staff training and support has been given.

An informative and entertaining training video has been developed and will be included in the conference presentation.

Discussion

Patients participating in the study have the opportunity to receive effective wound debridement. Staff have developed their clinical skills to deliver this intervention. The training video has been made available to support participating podiatrists and research centres. Podiatrists report high levels of satisfaction with the procedure.

D5.4

Changing course, evidencing uptake of podiatry led lower limb community vascular triage

Andrew Latham

Central London Community Health Care NHS Trust

Introduction

Peripheral arterial disease (PAD) is present in 20% of people aged 60 and over. It is associated with mortality rates of around 30% at 5 years and amputation rates of 25% at 1 year. Early PAD detection and treatment by podiatrists can save limbs and lives.

People presenting with suspected PAD in primary/community care are often referred unnecessarily to vascular specialists within secondary care. Up to 80% of referrals for vascular assessments do not usually require surgery and can be triaged to podiatry led services.

Methods

We piloted a one-year podiatry vascular triage service which saw 330 people reviewed and 220 diagnosed with PAD. Assessments, diagnosis and clinical management plans are now aligned to NICE guideline 147. To support delivery a vascular training programme for staff was central to guideline implementation. The Ankle Brachial Pressure reading (ABPI) acts to benchmark the level of cardiovascular intervention required.

Results

All trained podiatrists have now integrated ABPI measurement in their clinical assessments. The pathway provides access to community vascular triage for people with non-diabetic foot ulcerations of PAD origin, which was not previously available. The service is diagnosing PAD in equal numbers of people with diabetes 112 people (51%) and without 108 people (49%).

The 3 most common reasons for accessing the service were monophasic/absent foot pulses, PAD risk factors, and pre-operative evaluation prior to nail surgery. The most frequent outcome was referral to GP for medical review/initiation/adjustment of medical therapy. Approximately 15% identified with PAD were referred onto secondary care.

Discussion

Podiatrists demonstrate an effective community approach. Adopting a similar pathway can support a risk reduction for CVD and lower limb amputation. Skills training is fundamental to modelling behavioural change.

D5.5

An exploration of arterial duplex parameters and their potential for guiding the diagnosis of peripheral arterial disease

Catriona Doyle; Paul Fletcher

University of Northampton

The initial suspicion of Peripheral Arterial Disease (PAD) is a necessity in the work of a Podiatrist with assessment of vascular status regarded as a initiation towards its diagnosis and appropriate management. Given the challenges associated with utilisation of Ankle Brachial Pressure indices in determining possible presence of PAD, due to most notably presence of medial arterial calcification (MAC), the need for more robust methods of assessment is advocated. An undergraduate literature review found several Duplex Ultrasonography (DUS) parameters such as Peak Systolic Velocity (PSV) and Maximum Systolic Acceleration (ACCmax) did have higher accuracy than the traditional ABPI. The reporting of PSV values as reference ranges for four lower limb arteries (including the anterior and posterior tibial pulses) showed promise due to clear differentiations in the values which denoted presence/absence of PAD. As an example, the reference range for absence of PAD using the posterior tibial artery 62 to 80cm/s. For presence of PAD, the reference range began at 35cm/s and finished at 42cm/s. ACCmax had a high discriminatory power to distinguish between people with and without PAD in those with and without diabetes. A value of 500cm/s² and below regardless of

ABPI almost exclusively correctly predicted presence of PAD. This review shows that some DUS parameters are obtainable in the presence of MAC but it still remains a challenge to diagnose PAD relying on them on their own, a supplementary ABPI is required. Research into use of such and other parameters to detect PAD is ongoing, with the Ankle Profunda Index and Pedal Acceleration Time being introduced. The practical considerations of introducing Duplex Ultrasound to assess vascular status in Podiatry clinics remains to be explored, with cost and specification of the device, time, and training requirements necessary considerations before its use becomes a reality.

D5.6

Research priorities in diabetic foot disease - a James Lind Alliance priority setting exercise

Richard Collings¹; David Russell²; Joseph Shalhoub³

¹Torbay and South Devon NHS Foundation Trust; ²TPD Vascular Surgery, Health Education England Yorkshire and Humber; ³Imperial College

Introduction

Diabetic foot disease is a life-changing event for patients and is associated with high burdens to society in terms of cost, mortality and morbidity. The Vascular Society Diabetic Foot Specialist Interest Group (VSDFSIG), in partnership with the James Lind Alliance (JLA), aimed to identify and develop key research priorities for preventing and managing diabetic foot disease.

Methods

A modified JLA Priority Setting Partnership was undertaken. Two separate Delphi processes to identify research topics were undertaken with healthcare professionals, patients and carers, led by the VSDFSIG. This exercise produced a list of 12-research priorities. The final workshop was attended by patients, carers and healthcare professionals from a variety of backgrounds involved in the care of people with diabetes and foot pathology. Participants ranked the research priorities to produce a final list of ranked priorities.

Results

A total of 36 clinicians submitted 100 research questions relating to diabetic foot disease. These related to diabetic foot disease prevention (including recurrence and amputation), improving foot outcomes (treatment, risk assessment, blood flow, health promotion) and determining factors that affect healing time (delays in referral, foot infection, antibiotics, maggot therapy). The top 12 research priorities were agreed. An additional sandpit exercise involving clinicians and patients enabled specific research topics related to the top 12 research priorities to be formulated for further investigation.

Conclusion

The top 12 research priorities in the prevention and management of diabetic foot disease that will inform researchers, clinicians, and funders on the direction of future research questions are presented.

Podiatry 2022 Poster Presentations

P01

An Advocacy towards 'Green Podiatry' -- Time for Change to help save our Planet

Cynthia Formosa; Alfred Gatt

University of Malta

Climate change is a growing health threat around the world contributing to heat stroke, food insecurity, cardiorespiratory ailments and many other issues — and although the health care industry aims to promote good health, it also forms part of this problem. Global leaders are advocating for environmental sustainability as are many professional associations including those in medicine and allied health professionals. With help and cooperation from everybody we can try to save our planet. It has been reported that a multidisciplinary approach is needed to reduce the adverse health effects of climate change and podiatrists can also help fight this global concern by encouraging positive environmental and clinical practices, which may be effective in changing patient behaviours. This paper discusses the role of the Podiatrist to help fight the biggest global health threat of the 21st century.

P02

Safety netting Podiatry patients through the Integration of remote consultations at the onset of the Coronavirus (SARS-CoV-2) Pandemic 2020

Andrew Latham

Central London Community Health Care Trust

Introduction

With the arrival of the novel coronavirus (SARS-CoV-2) the delivery of podiatry care pivoted from the traditional face-to-face model to remote telephone consultations to prevent the spread of the virus. In context of Covid-19, Podiatry safety netting meant, provision of remote consultations to screen for Covid symptoms, undertake a social wellness check (food, electricity, social support) and podiatry concerns to safety net patients requiring podiatry appointments to prevent limb/life threatening problems. To support this a tele triage script protocolised the language and structure of questions. All podiatry teams (3) were mandated to this format/recorded in the electronic patient record system.

Method

Audit was undertaken to benchmark activity and identify any additional training needs. 5 case notes from 22 Podiatrists were reviewed: sample size of 110 from a single week. Data collection was from an electronic patients record system (System1) and data sets recorded on excel book. Benchmarking parameters were: Benchmark met 80-100%, partially met 50-79%, not met 0-50%.

Results

The composite bench markings cores indicated good take up of the tool by Podiatrists with benchmark expectations being met regarding Covid screening and podiatric concerns. The Wellness screening element was partially met.

The telephone triaging resulted in 1/3 of patients being contacted required face to face and direct intervention, of this group, 23% required clinic based care for ulceration and 7% required a home visit.

Discussion

Pivoting of services away from face-to-face model of delivery required managing in, audit demonstrated heterogeneity between teams using the templates and record keeping. All patient received a telephone triage. However composite data set should be interpreted with caution as it may mask individual team/Podiatrists could be doing better and require support. The landscape of Podiatry service delivery will continue to evolve as Pandemic evolves. Plan, Do, study, act (PDSA) cycles were essential to ensure patient safety.

P03

Could allied health professionals do more to provide an effective patient-centred approach

Molly Chilvers

Footcare with Molly

Lifestyle changes have led to the development of a new approach in tackling health inequalities, one that aims to modify the behaviour and lifestyles factors that contribute to chronic diseases (e.g. obesity, smoking). The term 'patient' becomes redundant in this approach, as the individual is an active partner in their care, not merely a receiver of care. Building a personalised approach to care in a partnership that incorporates shared decision making is a foundational principle of Realistic Medicine.

The treatment and management of chronic diseases is usually long term, where no one speciality can provide preventive or therapeutic lifestyle changes alone. GPs are skilled in diagnosing and treating diseases but have little time to oversee and motivate patients through lifestyle changes. As podiatrists who have regular contact with service users, we have a fortunate opportunity to support both the individual and our AHPs.

Motivational interviewing is a patient-centred tool to assist in reinforcing motivation to empower action. This collaborative approach aims to evoke and strengthen "change talk" from the individual, whilst recognising and respecting the individual's autonomy. With practice, motivational interviewing can be utilised in routine appointments in a timely manner. AHPs can influence the balance of change talk (pros) and sustain talk (cons) expressed by the individual, and this balance foretells subsequent change.

- Ask whether the individual considers if any aspects of their lifestyle could be improved
- Dependent on the answers, further explore the areas identified by the individual
- Advocate a referral to an AHP specialist or create a memo to discuss further on the next appointment
- If appropriate, carry out some basic measurements (e.g. waist circumference, weight)
- Provide written material on the lifestyle areas identified

AHPs should not underestimate the large contribution that can be made directly through the implementation and utilisation of brief consultations

P04

The effects of stress on wound healing and the need for a holistic wound assessment

Maria Cristina Fiol Ekman

Central London Community Health Care Trust

Introduction

This presentation will cover the problems that can be encountered during wound care clinics, and how to minimize them. In the following three months a review and analysis of databases will be conducted and a presentation about the consequences of stress on wound healing, and how performing a periodical holistic assessment can minimize them, will be prepared.

Method

A review of well recognized databases will be conducted to identify the most relevant English and Spanish language case-control, cross-sectional and randomized control trials that have reported the effect of stress on wound healing, and the benefits of using a more holistic wound assessment. The conclusions will be based on the available evidence from studies that met the inclusion and exclusion criteria.

Results and discussion

The evidence supports the relationship between stress and wound healing, which is not only a statistically significant but also clinically relevant. Psychological stress can modulate wound and bone healing processes. Furthermore, psychological stressors may impart both acute and chronic epidermal dysfunction, decreasing the protection against skin infection and inflammation, and can also directly modulate the repair process. The cost of poor healing is not to be ignored, for both patient and medical organizations, increasing the risk of wound infections with its complications, affecting the wellbeing and daily living of the patient and lengthening hospital stays.

This evidence-based review will explore the adverse effects of psychological stressors on wound healing. Can be demonstrated that having a better understanding of patient's biopsychosocial conditions and needs can have a detrimental impact not only on patient's wound healing process but also on wound prevention? Further investigations are needed to gain a comprehensive understanding of this impact, but also to identify practical stress-relieving therapies that can minimize and restore the epidermal barrier dysfunction and promote wound repair, particularly in at-risk populations.

P05

A deceptive case of a persistent wound post nail avulsion

Sofia Karpinski

Podiatry Department, Epsom and St Helier University Hospitals NHS Trust

Background

Desmoplastic melanoma is a rare type of melanoma which usually presents on sun-exposed areas such as head or neck, and in a few reported cases in the nail unit. This can be a diagnostic challenge as 50% of cases are amelanotic and there are variable presentations including papules, plaques or nodules, with or without ulceration. Here described is a case of desmoplastic melanoma presenting as a hypergranulating ulcer of the toenail bed.

Case description

An 82-year old Caucasian female presented to the podiatry clinic with a 1-year history of a wound to her left 2nd nail bed following a surgical nail avulsion due to infection after a pedicure. Apart from hypertension, her medical history was unremarkable. On examination, the distal phalanx appeared swollen and erythematous with a large 3 cm area of irregular hypergranulation. As the lesion was suspected to be malignant she was urgently referred to dermatology. A punch biopsy was performed and the subsequent histology was consistent with a benign sheath nerve tumour. This diagnosis was questioned when a metastatic melanoma was detected in her left ilioguinal lymph node. She had a second incisional biopsy of the nail bed wound with a histology suggestive of desmoplastic melanoma stage 3B according to the American Joint Committee on Cancer staging system. Unfortunately this was raised to stage IV M1d after scans showed further metastases in her brain, adrenal glands, right peroneal cavity and right obturator. She underwent amputation of the toe which healed without complications. Her brain metastases were treated with stereotactic radiosurgery and she is now undergoing immunotherapy with Nivolumab. Surveillance imaging will follow.

Conclusion

Desmoplastic melanoma can arise from the nail bed. Atypical features of an ulcer including hypergranulation should raise suspicion of malignancy. Biopsy and histological analysis are key to rule out or confirm the diagnosis.

P06

Psoriatic nail disease and podiatric practice

Sarah Bradshaw

The Foot Pad

Whilst nails represent a small percentage of our body surface area, psoriatic nail dystrophy can have a large impact on a patient psychosocially and can even be a predictor for more serious joint disease. Podiatrists as well as Dermatologists are in a unique position to help recognise the signs and patterns of psoriatic nail disease and support the patient through various treatment options and any psychological impact.

This poster explores some of the key clinical signs of Nail Psoriasis and its pathogenesis. Assessment and treatment options are highlighted including the roles of the Dermatologist and Podiatrist and how all clinicians play a vital role in the identification of Nail Psoriasis, inhibiting disease progression and supporting the psychosocial impact of this disease.

Key Points:

- Nail Psoriasis has a wide range of unguis lesions mainly affecting the nail matrix and nail bed
- The Nail Psoriasis Severity Index (NAPSI) is a useful tool for the assessment of Nail Psoriasis
- Podiatrists can provide additional, practical symptom management including,
 - Emollient and footwear advice

- Management of onycholytic nails, onychia and subungual hyperkeratosis
- Nail avulsion
- The psychological impact of Nail Psoriasis can be gauged by the Dermatological Quality of Life Index (DQLI)
- Nail Psoriasis is a major predictor for Psoriatic Arthritis

P07

Glycaemic control and its relation to foot skin Ph in people living with Type 2 Diabetes Mellitus

Cynthia Formosa; Stephen Mizzi; Neil Micallef

University of Malta

Aim

To determine whether different HbA1c levels, especially poor glycaemic control had a significant impact on foot skin pH.

Research design and method

Two hundred and forty-one participants (n=241) were recruited for this study on a first through the door basis; 180 living with type 2 diabetes mellitus and 61 healthy participants (Group1). The participants living with type 2 diabetes were categorised into three different groups according to their HbA1c levels: HbA1c levels between 2.5-5.9% (Group 2), 6-8% (Group 3) and > 8% (Group 4). Skin pH at predefined sites (plantar, interdigital and dorsal areas of each foot), were measured utilizing a skin pH meter (Apera PH60F™).

Results

Mean foot skin pH in all three regions of interest (ROI) between the four groups of participants was found to be significantly different with p-value being lower than 0.05. Group 2 (good HbA1c) presented with the lowest foot skin pH in all ROI, followed by group 1 (healthy), group 3 (fair HbA1c) whilst group 4 (poor HbA1c) presenting with the highest skin pH values. The mean interdigital foot skin pH was also found higher (less acidic in nature), when compared to the other sites for both the left and right foot across all groups.

Conclusion

This study concludes that a low skin pH (below 5.7), is associated with optimum skin function and health. Results obtained showed that the higher the HbA1c score, the higher (less acidic) the mean foot skin pH was observed in all ROI, thus possibly contributing to various dermatological conditions.

P08

The ACT NOW (Accident, Change, Temperature, New pain, Oozing, Wound) Toolkit: an innovative educational infographic for people with diabetes and health care professionals to recognise the warning signs of acute foot complications and address health inequalities in vulnerable populations

Anne Phillips¹; Jayne Robbie²; John Grummitt³; Mike Edmonds⁴; Anita Beckwith³; Charles Odiase³; Patrick Holmes³; Jane Diggle³; Chris Aldred³

¹Birmingham City University; ²University Hospitals Birmingham NHS Trust/Birmingham City University; ³iDEAL panel; ⁴Kings College Hospital, London

Aims

1. To disseminate an educational tool to recognise the acute signs of foot complications that might lead to amputation, which is a common outcome in many vulnerable groups.
2. To share the tool free of charge to those who need it
3. To reduce delays in accessing specialist foot services and reducing avoidable amputations thereby also reducing health inequalities.

Method

ACT NOW is a simple-to-use 6-step infographic which was produced following collaboration between Birmingham City University (BCU) and the iDEAL (Insights for Diabetes Excellence, Access and Learning) multi-professional panel to

include the checklist in order to help people with diabetes and health professionals to recognise the warning signs of foot complications thereby triggering rapid referral to specialist care.

ACT NOW is appropriate for use with all vulnerable people who do not or cannot access health promotion material, read English or who have mental health/learning difficulties. During 2020/2021 ACT NOW has been disseminated widely through both digital and traditional media and has been endorsed successfully and cited in many national guidelines as best practice.

Results

The adoption of the ACT NOW checklist enables vulnerable individuals to recognise the warning signs of a potentially limb-threatening foot problem and to seek specialist help in a timely manner. Recognizing that the challenges of inequality in diabetes are undoubtedly complex, ACT NOW has been created collaboratively to be the one-size-fits-all tool for foot problem recognition promoting earlier referrals.

Conclusion

The ACT NOW toolkit and infographic is a practical, low cost and innovative approach to reduce healthcare inequalities for vulnerable people and to promote earlier access to care which reduces delays in accessing specialist foot care services. It is now ready for piloting in the clinical situation to determine its patient-facing effectiveness.

P09

The CONNECTPlus App: a patient-focused, interactive, education App for people at risk of diabetic foot disease

Jennifer Williams¹; Su Stewart¹; Amy Kelly²; Hugh Kelly²; Richard Collings¹; Denise Walker¹

¹Torbay and South Devon NHS Foundation Trust; ²HCI Digital

Introduction

Preventing foot ulceration for those with diabetes is a key priority due to the resulting poor clinical outcomes, high financial cost, and reduction in quality of life. The International Working Group for the Diabetic Foot and NICE guidelines recommend that effective disease self-management and self-care practices can reduce diabetic foot ulceration risk. Providing high-quality, evidence-based, accurate, accessible patient education is fundamental to allowing individuals to make informed decisions with regard to their disease self-management and self-care practices. New technologies and innovations offer alternative strategies to deliver patient education, providing an opportunity to tailor and individualise patient education delivery.

Innovation

In 2020, an NHS Podiatry team and digital education specialist company collaborated to develop alternative methods of delivering patient information and education content for the diabetic foot. Short written commentaries, video clips and images were created jointly by a team of professional writers and clinicians over a six-month period. Content included educational information about; diabetes, complications in the feet, medication, healthy lifestyles, diabetes charities, and FAQs. Additionally, information for emergency contacts and 'meet the team' were included. Following content development, it was added to an App and launched in the App Store and Google Play.

Impact

As of 1st March 2022, the app had been downloaded 535 times. As well as accessing trustworthy information, users are able to keep track of their progress, medications and appointments. Within clinic practitioners are able to access and demonstrate the App to service users, carers, friends and family. The App can be updated with new information as required and a second version is now more interactive with appointment reminders and a 'how am I?' function to allow recording of risk factors, pain and activity levels.

P10

Gait and plantar pressure analysis in diabetic peripheral neuropathy: a systematic review

Erica Bartolo¹; Claudia Giacomozzi²; David Coppini³; Alfred Gatt¹

¹University of Malta; ²Italian National Institute of Health; ³Diabetes & Endocrinology, Mater Dei Hospital

Background:

In the presence of diabetic peripheral neuropathy, plantar ulceration occurs on high plantar pressure areas due to the repetitive, excessive mechanical loadings which causes tissue breakdown. Through this systematic review and meta-analysis, it is hoped that the underlying mechanism of what causes tissue breakdown is understood by looking into the effect of neuropathy on lower limb joint kinetics and kinematics, muscle activity and plantar pressures.

Method:

A systematic literature search was done for studies published between January 2000 and June 2019, evaluating the effect of diabetic peripheral neuropathy on hip, knee, ankle and foot joint kinematics and kinetics, spatiotemporal parameters, electromyography and plantar pressures during gait. Following a quality assessment of the sixteen studies included in this review, qualitative analysis and meta-analysis was performed on these outcome measures.

Results:

The qualitative and meta-analysis results in this review suggested that participants living with diabetic peripheral neuropathy exhibited reduced knee, ankle and rearfoot (Sha-Cal) kinematics, higher midfoot and rearfoot peak plantar pressures and higher PTI in the medial forefoot, lateral forefoot and midfoot regions. However, conflicting results were present between studies with regards to the spatiotemporal parameters and lower limb muscle activity. Further research is required, including larger sample sizes, to decrease heterogeneity of the meta-analysis results since there is paucity of information on the effect of diabetic peripheral neuropathy on the outcome measures assessed.

Conclusion:

Literature states that diabetic peripheral neuropathy may cause a decreased range of motion in the knee and ankle joints. This may produce inadequate dorsiflexion of the foot during initial stance phase of gait, thus redistributing plantar pressures to the midfoot and forefoot regions for longer periods during gait, resulting in tissue breakdown. Further research, examining the outcome measures assessed in this review in the presence of active ulceration, might offer a better understanding.

P11

Enhanced diabetes foot education delivery in a remote and rural region

Fiona Main¹; Jane Gorman¹; Claire MacKenzie¹; Sandra Jones¹; Janet Heaton²; Jenny Hall²; Alison Heggie¹; David Macfarlane¹; Sandra MacRury³

¹NHS Highland; ²University of Highlands & Islands; ³University Highlands & Islands

Introduction

Ulceration and amputation are common complications of diabetes significantly impacting quality of life for people with diabetes and costs to healthcare providers. It is estimated that more than £80million is spent on foot ulcers and amputations annually in Scotland alone. (1) Therefore, prevention of foot ulceration and amputation is crucial to try and reduce the enormous healthcare, patient and societal burden (2). Delivering a diabetes foot service in a remote and rural region is challenging. A new service pathway using technology-enabled care has been integrated remotely managing diabetes foot ulceration and supporting early review by the multi-disciplinary foot team. A pilot study to improve connectivity using satellite will further enhance the new pathway and is being evaluated by the University of Highlands and Islands. Enhanced footcare education will be delivered remotely as part of this initiative to help raise awareness of foot ulcer prevention.

Method/ Discussion

Patients with high-risk feet will be identified by the medical practice and diabetes specialist podiatrists with a referral proforma emailed to a generic mailbox for triage. A video-consultation will be coordinated following an invitation letter posted to the patient. The patient will attend the medical practice for foot screening and be assigned a foot risk

followed by the Healthcare Professional facilitated video-consultation using NearMe with the centrally located specialist diabetes podiatrist. Enhanced education tailored for each patient will be delivered remotely by video-consultation to raise awareness of footcare measures and foot ulcer prevention strategies and a leaflet specific to the patients' foot risk will be provided by the healthcare professional to reinforce key points and contact details.

There will be a short patient evaluation following each video-consultation and a more thorough evaluation to assess impact following a second review eight weeks later.

P12

Opportunities to develop research experience for Podiatrists across the UK

Helena Meally¹; David Russell²; Elizabeth McGinnis³; Nikki Dewhurst⁴; Rachael Gilberts³

¹Birmingham Community Healthcare NHS Foundation Trust; ²Honorary Consultant Vascular Surgeon; ³University of Leeds Clinical Trials Research Unit; ⁴Leeds Teaching Hospitals NHS Trust

Introduction:

The NIHR associate Principle Investigator (PI) Scheme aims to integrate clinical research into clinical training and develop allied healthcare professionals to be PIs of the future. The scheme provides an excellent opportunity for career development and engagement with NIHR portfolio research whilst providing increased opportunities for patients to be involved in high quality research to improve care.

Methods:

The scheme is open to any allied healthcare professional willing to make a significant contribution to the conduct and delivery of an NIHR portfolio study at a local level. Local PIs will act as mentors to their Associate PI. A commitment of at least 6 months will be required for gaining Associate PI status and Associate PIs will be asked to fill out a checklist of their activities during the time including signing study-specific delegation log, dissemination to the department, engagement with staff & research teams, data returns and quality, recruitment and consent of patients and staff training. There is a parallel online learning component on the NIHR learn platform.

Results:

Associate PIs learn about the challenges and practicalities of delivering a portfolio study with recognised formal certification for their CPD portfolio and acknowledgement in the primary publication(s) from the study (defined on an individual trial basis).

Discussion:

The Associate PI scheme provides an excellent platform for Podiatry colleagues interested in research to develop experience and skills for the future. There are 2 Diabetic Foot Ulcer (DFU) portfolio studies currently registered to the scheme with future studies planning to join in the near future: MIDFUT (CPMS ID: 33945) and DOMINO-DFU (CPMS ID: 49009).

Further information is available at <https://www.nihr.ac.uk/health-and-care-professionals/career-development/associate-principal-investigator-scheme.htm>

P13

The use of mental-imagery as a technique from neuro-linguistic programming to revise the femoral triangle

Catriona Doyle

Private Practice

As anatomy is a very visual discipline, the use of mental imagery techniques from Neuro-linguistic Programming (NLP) can be a creative way of picturing structures and their locations within the lower-limb. In this project, the femoral triangle of the thigh was visualised using a technique called mental rehearsal. The rationale behind the project was that by creating an image in the minds of participants, they would come to quickly and confidently recall the boundaries and contents of the femoral triangle. The participant's task was to visualise the muscles and vessels in time with oral detection of a script read by the researcher. Change in recall was determined by completion of quizzes before and after

the task. The outcome was an increase by 20% in the correct recall of the structures. The focus required to visualise the structures in synchrony with the verbal instructions may explain the increase in knowledge at the end of the research. The fact that the participants enjoyed participating may also explain why they retained well following the task. Mental imagery could be utilised in other topics within Podiatry where visualisation of structures is necessary for learning. A much larger number of participants would be needed to validate and expand upon the findings here. The project was completed as part of the researcher's participation in the Council of Deans / Burdett Trust of Nursing Student Leadership Programme in 2019.

P14

Undergraduate student views about patient-centred care within nail surgery

Ria Patel; Lindsey Cherry

University of Southampton

Background:

Onychocryptosis (OC), a common podiatric complaint, presents with overgrowth of the nail edge penetrating into the nail sulcus. Nail surgery, via various means, is one management option alongside conservative approaches. However, the adoption and implementation of patient-centred care (PCC) to support shared-care planning for OC have not been widely explored to date.

Patient-centred care (PCC) is a model describing ways that care is delivered, keeping patients in centrality. Reported PCC benefits include reduced medication use, lower infection rate, increased quality of life, and improved patient satisfaction. However, to translate PCC benefits into nail surgery practice there is a need to understand workforce training and readiness. Thus, this project aimed to explore student views about PCC within nail surgery, in the context of their learning journey and readiness to practice.

Methods:

Undergraduate students from a single UK University BSc Podiatry programme were invited to participate in a focus group (FG). The FG transcript was thematically analysed, using an inductive approach. First and second order themes were discussed with a second student researcher to support their reiteration and refinement.

Results:

Participants shared a general summary understanding of PCC, with emphasis on establishing a patient-professional rapport, including patients within decision-making and encouraging effective communication between the dyad. Submerging themes were orientated toward the general use of PCC in 'everyday practice' rather than employing specific aspects of PCC within perioperative nail surgery. Possible barriers impeding the student learning journey and preparedness for practice include content knowledge and application skill, a lack of role-modelling on placement, and a lack of explicit taught content on the topic.

Conclusion:

Students held the view that PCC within nail surgery was important. They identified a need for increased theoretical and skills-based teaching in relation to PCC and a keenness to observe more PCC practise within placement settings.

P15

Developing additional diverse student and apprenticeship placement capacity to meet the Podiatry workforce supply requirements of an ICS

Diane Sibbald; Barbara Foggo

NENC EELE Team working on behalf of HEE

The Team was created following region wide stakeholder engagement regarding the need to work collaboratively across the ICS reviewing future workforce needs, workforce supply routes and ensuring sufficient placement capacity to support this. The core team came into post in January 2021, working across Nursing, Midwifery, AHP and Healthcare Science professions.

This work included reviewing Podiatry workforce data across the footprint, and discussing future workforce needs with individual Trusts, incorporating the future needs of Primary Care and Private Practice within the ICS. The team have liaised with a variety of stakeholders: HEE, HEI's, the ICS AHP Faculty and placement providers to ensure collaborative working across organisational boundaries. AHP Practice Placement Facilitator roles are being developed within NHS Trusts in the region. This was a new role to this ICS and the team have developed and facilitated an AHP Practice Education Forum to support sharing of best practice.

The team has one multi professional Practice Placement Facilitator role for each of the four ICP place based teams, and they have been involved in developing additional placements in the PIVO, Education, Social Care and Primary Care sectors, providing a more diverse and robust placement circuit for Podiatry students and apprentices over a large geographical area with varied learning opportunities.

The work of the team will support the ongoing growth of Podiatry in all sectors across the ICS, ensuring workforce supply for future service provision.

P16

Podiatry in end of life care

Mark Povey

Kent Community Health NHS Foundation Trust

Introduction

Podiatrists have a valuable role in managing foot problems in End of Life Care (EoLC) but there is a lack of appropriate clinical guidance, especially with regard to conducting wound debridement in the dying patient.

Innovation

Following a literature search of the role of Podiatrists in palliative wound care and wound debridement, a Quality improvement (Qi) project was instigated and clinical guidelines were developed. The main aims of the Qi project were to assess the confidence, knowledge and training needs of Podiatrists in debriding foot wounds in EoLC patients; to design a relevant and practical clinical decision-making tool for wound debridement in EoLC patients; and to develop relevant training in order to improve knowledge, skills and confidence in managing EoLC patients.

Impact

Podiatry clinical staff were asked to complete a Survey, which yielded a mixture of quantitative and qualitative data. Staff were introduced to the DECIDE clinical decision-making tool for wound debridement in EoLC patients, in order to aid clinicians in their thought-processes and clinical justification, when considering wound debridement in EoLC patients.

Working in collaboration with a Consultant Nurse in EoLC, a training package was designed and piloted among a small group of Podiatry clinical staff, with promising results, which will be rolled out in due course to a large number of staff this year. It is hoped that this will lead to a greater confidence in managing high risk EoLC patients with foot wounds and further analysis will be undertaken in June, to determine the effectiveness of the training received.

P17

The perceptions of podiatrists of their role in the treatment of patients with osteoporosis

Tabatha McCormick; Charlotte Lee; Emelyne Holden; Rachael Allen; Emma Cowley

University of Southampton

Background

One in two women and one in five men will suffer from an osteoporotic fracture in their lifetime, these fractures can lead to a loss of quality of life, morbidity and mortality. The triad of osteoporotic fractures are the wrist, hip and vertebrae. However, osteoporotic fractures can occur in any bone in the body including the foot and ankle. The cost of osteoporosis is expected to rise to £5.5 billion by 2025.

Podiatrists are healthcare professionals who are experienced in working with patients with long-term health conditions and are experts in the lower limb. Therefore, it is believed that podiatrists could be well placed to help to manage the

care of patients with osteoporosis through podiatric interventions. However, little is known about the knowledge and perceptions that podiatrists have about osteoporosis.

Methods

An online survey was distributed to UK podiatrists who are members of the Royal College of Podiatry (RCPod). This survey was to capture data in relation to the podiatrist's role in the detection, acute management, chronic management, and the monitoring of osteoporosis. And the barriers that podiatrists face in the treating of these patients.

Free text questions were analysed using thematic analysis

Results

60 podiatrists from across the UK completed the survey. Results showed that podiatrists do believe that they have a role in the management of patients with osteoporosis. The barriers that currently prevent podiatrists from working with this patient group include, a lack awareness and training.

Conclusions

Podiatrists are keen to learn and understand more about osteoporosis. It is recommended that a training course is developed with the Royal College of podiatry. Ensuring that podiatrists are able to work effectively with this patient group and will help to fulfil the musculoskeletal strategy that is set by the RCPod.

P20

Treating MSK Foot and Ankle patients remotely with orthoses: Is it safe and does it work as a viable treatment option?

Adam El Shafei

NHS Lanarkshire

Purpose:

Covid-19 has changed the landscape of healthcare forever and with that has come increased popularity of remote assessments to help manage ever growing NHS waiting lists. This has provided a means to treat patients during this difficult time, allowing treatment to be accessible even through government lockdowns to ensure that patients are being given necessary, safe treatment while protecting outpatient capacity. In order to achieve this in NHS Lanarkshire, patients were assessed remotely and posted an orthosis. This audit was carried out to determine if this practice was successful and safe.

Method:

Data was collected on MSK Foot and ankle patients within NHS Lanarkshire. These patients either undertook a telephone, a video (via NHS NearMe) or a face-to-face consultation.

102 patients who received treatment remotely were randomly selected and contacted at 6 months post treatment. They were asked a series of questions pertaining to their experience with the orthosis that was posted to them following their remote consultation. The questionnaire gathered data on falls, safety issues, comfort and effectiveness.

The review included an equal spread of patients from the caseloads of 5 different orthotists, all of whom had varying levels of experience.

Results:

No falls were reported and 5% (n = 5) felt unsafe when using the orthoses. 44% (n = 45) reported an improvement in symptoms while 49% (n = 50) reported no change and 7 (n = 7) reported worsening symptoms following orthotic use. Mean orthotic comfort score was 7/10.

Conclusion:

For a proportion of MSK Foot and Ankle patients, remote consultations may be an effective and safe method of providing care to ensure patients receive this care in a timely fashion during times of pressure on waiting lists and outpatient capacity.

P21

The static validation of pressures from innovative, single-sensor, in-shoe pressure and temperature monitoring device

Claire Saliba Thorne; Alfred Gatt; Cynthia Formosa; Clifford DeRaffaele; Abdurahman Bazena
University of Malta

Aims: To perform laboratory static validation of pressures from an innovative, single-sensor pressure and temperature monitoring device for the early detection of complications in high-risk foot.

Methods: A pressure generating rig, the Tekscan™ Equilibration 'bladder calibrator', was used to produce a known force, against the gold standard, FScan™ in-shoe pressure mapping system by Tekscan™ and the newly developed prototype. The F-scan® system was used to record the pressure readings and establish a baseline for the readings recorded by the developed prototype. A total of 20 pressure values were recorded with 100 samples each.

Results: Exploratory data analysis was conducted to gain insights and analyze the prototype's behavior at different pressure points. Pre-processing and data cleaning were also performed to remove any anomalies. Support Vector Regressor with a polynomial kernel and Grid-Search algorithm was used to fit the recorded data curve. The best combination of parameters had a Mean Squared Error of 2.59 and a Root Mean Squared Error of 1.61. A simple linear equation was used to convert raw readings to pressure values.

Conclusion: The results of this study conclude that the measurements from the prototype are congruent to the gold standard, F-scan® in-shoe system. This confirms that the prototype is a valid device that can be used safely as a low-cost alternative to current costly commercial in-shoe pressure mapping devices.

P22

The validation of an innovative single-sensor, in-shoe pressure and temperature monitoring device

Claire Saliba Thorne; Alfred Gatt; Cynthia Formosa; Clifford DeRaffaele; Abdurahman Bazena
University of Malta

Introduction:

The aim of this study was to validate an innovative, single-sensor in-shoe pressure and temperature monitoring device for the measurement of combined temperature and pressure patterns in high-risk patients.

Methods:

Five healthy adult participants were recruited. The prototype was validated against the gold standard FScan™ in-shoe system for pressures and the Flir® T630sc thermographic camera for temperatures. Participants were asked to walk at a comfortable pace on an electric treadmill for 13 minutes. The prototype and the FScan in-shoe sensors™ were superimposed inside the shoe of the participant, with the prototype on top, to ensure direct contact with the area of interest. Two thermographic images were captured using the Flir® T630sc thermographic camera, before and after the walk. During the trials, the participants wore 100% cotton socks and their own sports shoes and pressures were recorded at 50 readings a second.

Results:

The raw readings of pressure were passed to the regressor, which returned the estimated kPa value. Several evaluation metrics were used to evaluate the performance of the modal. The prototype gave equal results to that of the gold standard, the FScan™ in-shoe system. With regards to temperature measurements, both devices gave similar readings.

Conclusion:

This innovative single-sensor, in-shoe pressure and temperature monitoring device gave similar measurements of pressure to the FScan™ system and temperature measurements were equivalent to the Flir® T630sc thermographic camera. The authors are confident that the innovative, low cost, single-sensor, in-shoe pressure and temperature monitoring device can be used as an alternative to the costly available commercial devices that measure pressure and temperature separately to detect early signs of complications in the high-risk foot.

P23

The Thermo-Pressure Concept: a novel way of diabetic foot screening?

Alfred Gatt¹; Sarah Perren¹; Nachiappan Chockalingam²; Cynthia Formosa¹

¹University of Malta; ²Staffordshire University

Elevated foot pressure and high temperatures have been proposed as predictive factors for diabetic foot ulceration; however, on their own, their predictive value is still questionable. This pilot study hypothesized that combining these two measurements in a thermo-pressure model could result in a more reliable risk assessment tool for providing risk categorization aimed to determine whether there is a correlation between foot plantar pressure and temperature in patients living with diabetes mellitus (DM) when compared with healthy individuals following a 15 minute walk.

Foot pressure and thermographic images were taken from 48 participants who were categorised into four groups following clinical evaluation into healthy individuals (Group A), living with DM with no complications (Group B), DM with peripheral arterial disease (Group C) and DM patients with neuropathy (Group D). This study demonstrated a positive correlation between pressure and temperature; as pressure increases, so does temperature. This was more pronounced in the groups with DM when compared to the healthy group. More research is warranted to further develop this innovative thermo-pressure model, which could hopefully be more sensitive in categorizing and identifying patients living with DM who are at risk of developing foot ulceration to initiate prompt care.

Conference organisers

Profile Productions Ltd

Boston House, 69-75 Boston Manor Road, Brentford, TW8 9JJ

Tel: +44(0) 20 3725 5840, fops@profileproductions

www.profileproductions.co.uk

