

MEETING ABSTRACTS

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# Abstracts from the College of Podiatry Annual Conference 2018

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## Short papers

001

### Characteristics and treatment of patients with intermittent claudication. A comparison between UK and Maltese populations

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**Background:** Intermittent claudication (IC) is the most common symptom of peripheral arterial disease (PAD). It is strongly associated with an increased risk of myocardial infarction, stroke and cardiovascular mortality by up to 4 times greater than in patients without IC. Over the years effort has been made within the health sector to raise awareness of the cardiovascular risk factors present in patients with PAD. However, a prospective registry of patients was still lacking.

Therefore, a prospective registry of PAD risk factors, events and peripheral perfusion of patients with IC referred from primary care to specialist vascular clinics was undertaken. Baseline characteristics and treatments were compared to previously published UK data (PREPARED-UK). This information may provide a point of reference by which future health practices may potentially improve.

**Methods:** A cross-sectional observational study was conducted, where all patients referred to a Vascular Clinic in a local hospital over 12 months, due to IC were invited to participate. Individuals who gave informed consent to participate were assessed for PAD by hemodynamic analysis. A full medical history including previous cardiac events or stroke, medications taken and associated participant demographics were noted. Results were compared to PREPARED-UK data.

**Results:** A total of 150 consecutive participants were recruited. These included all the patients referred to the specialist vascular clinic from primary care GP clinics. The main demographic characteristics of enrolled participants indicate that the two populations are similar in age, BMI, smoking status and anti-platelet therapy. However, a much higher prevalence of hyperlipidaemia (HLD), diabetes, hypertension (HTN) and statin use is observed in the Maltese prospective registry compared to data published by in the PREPARED-UK registry (HLD 78.4% vs 43.1%, Diabetes 66.2% vs 20.1%, HTN 84% vs 55.4%, statins 76% vs 40% respectively).

**Conclusion:** Our findings indicate a distinct difference in prevalence of important cardiovascular risk factors between the two populations. Hypertension, hyperlipidaemia and diabetes have been linked with a 7-fold increased risk of having a cardiovascular vascular event. However, similar to the UK population, about one third of the patients were not prescribed anti-platelet medication or statins. Despite the Consensus Report stating that antiplatelet therapy should be used routinely in PAD, with aspirin as the first line treatment, patients are still poorly managed prior to referral to the vascular specialist indicating an underestimation of the serious nature of the disease. Therefore, more referrals by primary health GPs to podiatrists for vascular assessment are required, so that once PAD is diagnosed immediate referral for risk factor management is undertaken. Additionally,

follow-up of these patients would help to ensure that important risk factors are being managed while also monitoring PAD status.

002

### Does PRP have antimicrobial properties?

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**Background:** Platelet Rich Plasma (PRP) is a blood product having a platelet concentration above baseline. *In vitro* studies have reported that PRP may significantly inhibit the growth of undesirable pathogens in diabetic foot ulcers (Bielecki et al. 2007, Moojern et al. 2008). This study aimed to determine the inherent antibacterial properties of autologous PRP from 40 study participants. The participants consisted of 3 groups. Healthy diabetics – no complications of diabetes and a HbA1c <8% (n=13) and their healthy age gender matches (n=13) and a discreet group of 14 participants who had a non-healing diabetic foot ulcer with no antibiotic therapy in the preceding 21 days. Ethical approval was obtained from ORECNI (10/NIRO2/30).

**Method:** A sample of 55ml of whole venous blood was drawn from each participant and prepared as per the manufacturer's instructions to produce PRP. The antibacterial efficacy of PRP was established using the well diffusion assay. Five wells were aseptically created in each nutrient agar plate seeded with lawns of *S. aureus* (NCTC 8329), *Ps. aeruginosa* (NCTC 10780), Methicillin-resistant *S. aureus* (MRSA) (NCTC 8323), MRSA – clinical isolate, *S. pyogenes* ( $\beta$  Haemolytic Streptococcus) (NCTC10876), *Proteus vulgaris* (NCTC10031) and *E. coli* (NCTC09001). These bacteria are of significance in diabetic foot wounds (Lipsky and Berendt 2000, Vardakas et al., 2008). PRP from the study participants was aseptically transferred into 4 of the wells; the 5th (control) well contained Ringer's solution. The plates were incubated at 37 °C for 24 hours, and the resultant zones of inhibition were used to provide a semi-quantitative estimation of antibacterial activity.

**Results:** Zones of inhibition (ZOI) were observed on the lawns of *S. aureus*, *S. pyogenes*, and *Proteus vulgaris*, of all participants. ZOI were also observed on the lawns of MRSA (both types) in the age gender matched group and participants with an active diabetic foot wound. Enhanced growth of *Ps. aeruginosa* was observed in the healthy participants (n=11), as previously found by Bielecki et al. (2007), but was also observed in participants with diabetes and participants with diabetes (n=10) and an active diabetic foot wound (n=13).

**Conclusion:** These findings may be clinically significant, as they demonstrate that PRP has a wider than previously recognised range of antimicrobial activity against infecting/contaminating bacteria. Zones of inhibition were not identified for all the participants on the plates with lawns of these organisms. The significance of these effects requires further investigation in the clinical environment as the *in vitro* findings may not mimic what happens *in vivo*.

