

Game Changers

IRREVERSIBLE ELECTROPORATION TREATMENT OF PANCREATIC ADENOCARCINOMA – A FIRST IN NORTHERN IRELAND

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Pancreatic cancer has a rising incidence in the Western world and is the 5th most common cancer in the UK. Five-year survival rates are reported to be as low as 5%. Thirty percent of patients have unresectable disease due to the disease being locally advanced, and in this group median overall survival varies between 9 to 32 months. Irreversible electroporation (IRE) is a new technique with the potential to improve survival in these patients. This is a soft tissue ablation technique which involves the pulsation of electric currents through the tumour. It does this without significant heating of the targeted tissues and so limits damage to surrounding structured cells such as vessels and ducts. Studies have reported a median overall survival of up to 22-35 months following treatment of localised disease with IRE.

Intraoperative IRE debuted in Northern Ireland in November 2018 at the Mater Hospital, Belfast in a patient who had a locally advanced tumour and a previously failed pancreaticoduodenectomy. IRE probes were placed under ultrasound guidance by interventional radiologists following surgical exposure and the tumour was ablated. The patient made a full recovery and a follow-up CT scan showed a satisfactory ablation zone.

IRE provides another treatment modality for patients who previously would have only had the option of palliative chemotherapy. It is great to see this exciting new treatment is now a possibility for patients with inoperable pancreatic tumours in Northern Ireland.

1. Ansari D, Kristofferson S, Andersson R, Bergenfeldt M. The role of irreversible electroporation (IRE) for locally advanced pancreatic cancer: a systematic review of safety and efficacy. *Scand J Gastroenterol*. 2017; **52(11)**: 1165-1171. Epub 2017 Jul 7.
2. Holland MM, Bhutiani N, Kruse EJ, Weiss MJ, Christein JD, White RR, et al. A prospective, multi-institution assessment of irreversible electroporation for treatment of locally advanced pancreatic adenocarcinoma: initial outcomes from the AHPBA pancreatic registry. *HPB (Oxford)*. 2019 Feb 5. pii: S1365-182X(19)30005-X

THE NAIL-BED AS A WINDOW TO DISEASE: THE DEVELOPMENT OF A NURSE LED CAPILLAROSCOPY SERVICE.

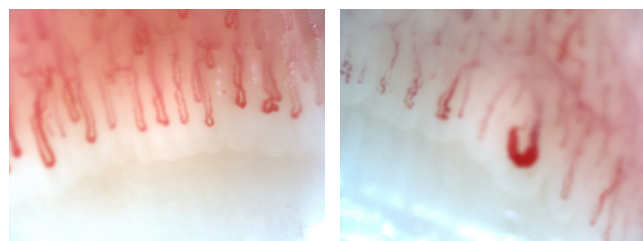
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Nail fold capillaroscopy is a non-invasive method of examining the nail-bed of patient's with raynaud's phenomenon (RP) to assess for any abnormalities. The first use of a microscope to visualise the capillary loops was when JC Klaus described his findings around 400 years ago¹. In the 20th Century the technique has found favour again with physicians describing specific patterns that relate to connective tissue disease. Three to twenty percent of the population have RP² and 10% of these patients will have connective tissue disease. These abnormalities include findings of capillary dilatation, bleeding and reduced density. Nail fold capillaroscopy now forms part of the European and American criteria for systemic sclerosis and not only does it allow earlier diagnosis and treatment for those with scleroderma but it can also facilitate discharge of those patients with RP and normal capillaroscopy findings.

Within the Belfast Trust members of the rheumatology service have been able to learn the technique under the tutelage of Professor Cutolo in Italy, an expert in the technique. After a pilot scheme in 2018 a nurse led service has now been established within the Trust. The technique involves a microscope linked with a camera; cedar oil is placed on the nail bed to create a smooth surface. The 2nd-5th fingers are visualised on both hands. Normal capillaries are homogeneously sized, hairpin shaped and regularly arranged, running parallel to skin surface. There is usually between 6 and 14 capillaries per millimetre with 9 being average.

Up to 60% of the normal population have isolated morphological anomalies but key features that are pathological include giant capillaries (>100micrometres), extensive areas with loss of capillary density and recurrent haemorrhages and neoangiogenesis. These changes are specific for systemic sclerosis but non-specific abnormalities can also be seen in dermatomyositis, mixed connective tissue disease and SLE.



Images from Belfast Trust Capillaroscopy clinic (Patient permission granted) 200x Magnification:

Image Left - Normal Capillaroscopy with hairpin capillaries and normal density.

Image Right - Abnormal Image in Systemic Sclerosis with a Giant capillary and loss of Capillary density.

1. Chojnowski, Marek M et al. "Capillaroscopy - a role in modern rheumatology" *Reumatologia*. 2016; **54 (2)**: 67-72.
2. Goundry Beth et al. "Diagnosis and management of Raynaud's phenomenon" *British Medical Journal*. 2012; **344**: e289.

HYPERTENSION TARGETS - MOVING THE GOALPOSTS AGAIN!

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Hypertension, defined as blood pressure $\geq 140/90$ mmHg, is the leading risk factor for mortality and disability-adjusted life years.¹ To promote earlier intervention and reduce the risk of complications that occur at lower blood pressure levels recent US guidelines have reduced the threshold for diagnosis to $\geq 130/80$ mmHg (Stage 1 Hypertension)². Intervention includes lifestyle advice and risk modification. They advocate that only those with Stage 1 Hypertension with a previous cardiac event or a 10 year atherosclerotic cardiovascular risk of 10% or higher should be commenced on pharmacological treatment. In the UK, NICE <https://www.nice.org.uk/guidance/indevelopment/gid-ng10054/documents> are also advocating for similar changes to hypertension guidelines.

It is predicted that half the US population will have hypertension with the new guidelines (compared to one third at present). The largest increase in prevalence will be amongst younger adults (doubling in women <45 years old and tripling in men <45 years old).³ There is no comparable UK data available yet.

Guideline authors stressed that increasing the prevalence of hypertension will heighten awareness, promote healthy lifestyles and reduce cardiovascular and renal risks. They argue that medication use will only rise modestly, but will be more focused and aggressive in those deemed to have established cardiovascular risk.

The defining blood pressure levels have been lowered but arguably the approach to hypertension is changing too.

Reference is made to “resource constrained populations” and the need to consider socio-economic context when developing management strategies. In instances where more than one medication is required, preference should be given to combination formulations in order to promote patient adherence. Telehealth and mobile phone communication are cited as ways to promote health literacy.

Publication of the SPRINT study potentially favours more aggressive treatment aims for hypertension, although not without considerable risk of adverse events from medications.⁴ There are also broader questions to ask. Are we too quick to deal with numbers instead of real people when it comes to treatment strategies and how can we improve the experience of living, not just by reducing mortality?

1. Lim SS, Vos T, Flaxman AD, Danaei G, Shibuya K, Adair-Rohani H, et al. A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010. *The Lancet*. 2012; **380(9859)**: 2224-60.
2. Whelton PK, Carey RM, Aronow WS, Casey DE, Collins KJ, Himmelfarb CD, et al. ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA guideline for the prevention, detection, evaluation, and management of high blood pressure in adults: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *Journal of the American College of Cardiology*. 2017; **13**: 24430.
3. Muntner P, Carey RM, Gidding S, Jones DW, Taler SJ, Wright Jr JT, et al. Potential US population impact of the 2017 ACC/AHA high blood pressure guideline. *Journal of the American College of Cardiology*. 2018; **71(2)**: 109-18.
4. Ambrosius WT, Sink KM, Foy CG, Berlowitz DR, Cheung AK, Cushman WC, et al. The design and rationale of a multicenter clinical trial comparing two strategies for control of systolic blood pressure: the Systolic Blood Pressure Intervention Trial (SPRINT). *Clinical Trials*. 2014; **11(5)**: 532-46.



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