synovial hyperplasia and PD synovitis, and qualitative scoring systems (0/1) for tenosynovitis/peritendinitis.

Results: The median age of 258 enrolled patients were 51.4 years with 82.9% females. Their median disease duration was 55 months, and median disease activity score based on 28 joint count were 4.6. In a total of 5676 joints assessed, 968 joints (17.1%) were swollen and 1296 joints (22.8%) were tender, while on ultrasonography GS synovial hyperplasia was present in 801 (14.1%) joints, PD synovitis in 476 (8.4%) joints and tenosynovitis/peritendinitis in 108 (1.9%) joints. The general agreement between clinical signs and ultrasound-determined joint inflammation in all joints was fair ($\kappa=0.365$, $p<0.01$). In wrists, joint tenderness showed higher κ coefficient ($\kappa=0.329$, $p<0.01$) with ultrasound-determined joint inflammation than swelling ($\kappa=0.263$, $p<0.01$), while on the contrary, swelling showed higher κ coefficient ($\kappa=0.156-0.536$, $p<0.01$) with ultrasound-determined joint inflammation than tenderness ($\kappa=0.061-0.355$, $p<0.05$) in MCP and PIP joints. Both synovial hyperplasia and synovitis detected by ultrasound had consistently higher agreement with tenderness/swelling than tenosynovitis/peritendinitis. Joint tenderness and swelling had the highest κ coefficient with GS ≥ 1 synovial hyperplasia in most MCP and PIP joints, while with GS ≥ 2 synovial hyperplasia in wrists. For all 22 joints, PD ≥ 1 synovitis had the highest κ coefficient with clinical tenderness and swelling.

Conclusions: Synovitis had better agreement with clinical signs than tenosynovitis/peritendinitis. Joint swelling showed better agreement with these ultrasonographic changes than tenderness for MCP and PIP joints, while the opposite for wrists. The minimal requirements of synovial hyperplasia/synovitis which correspond to clinical signs are GS ≥ 1 for MCP and PIP joints, GS ≥ 2 for wrists, but PD > 1 for any joint.

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imaging is applied for various clinical settings. A combined approach using both nCS and TG could improve the differentiation between pRP and sRP.

Objectives: The aim of this pilot study was to determine which technique (TG versus nCS) allows the best discrimination amongst older patients with pRP and sRP.

Methods: Thirty patients with RP (pRP, n=21; sRP, n=9) underwent nCS (Olympus SZ51) and TG (Flirb B 620). Nailfold morphologic features were measured and scored on capillary density, giant capillaries, ramification and hemorrhages. The patients were divided into three categories: normal, slightly abnormal (slightly enlarged capillaries) and severely abnormal (destruction of capillary structure and hemorrhages).

TG of the hand was performed before, directly after and 10 min after a cold challenge test with cold manchetts of 3°C. Rewarming and reperfusion were monitored and baseline images and rewarming curves were analysed.

Results: Capillary abnormalities with nCS were found in all patients with sRP (9/9) and in 52% (11/21) of patients with pRP. Out of 11 pRP patients with altered capillary morphology, 7 (63%) had a cardiovascular disease.

TG demonstrated a lower average temperature at baseline in the pRP group compared to the sRP group (d 1.68°C, $p<0.01$). In patients with pRP temperature decreased after cold induction (-2.34°C , $p=0.01$), whereas in sRP patient temperature stayed consistent ($+0.07^{\circ}\text{C}$, $p=0.46$) (table 1). In both groups temperature increased ten minutes after cold induction (pRP $+2.62^{\circ}\text{C}$, $p<0.01$; sRP $+1.57^{\circ}\text{C}$, $p<0.01$).

The gradient of the rewarming curve was significantly lower in patients with sRP compared to the pRP group (median 0.16 vs. 0.26 °C/min; $p=0.015$).

Abstract FRI0599 – Table 1

Average temperature of the fingers before the immersion in cold water (in °C)	Average temperature of the fingers just after the immersion test (in °C)	Average temperature of the fingers 10 min after removing the hand from cold water (in °C)	Average temperature recovery speed (in °C/min)
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Primary Raynaud Phenomenon	29.49	27.15	29.77	0.26	Secondary Raynaud Phenomenon	31.17	31.24	32.81	0.16	Capillaroscopy abnormalities	25.80	25.60	27.92	0.23	Secondary Raynaud phenomenon and Capillaroscopy abnormalities	27.99	28.15	31.52	0.34
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Conclusions: Nailfold capillaroscopy and thermography can reliably be used to measure microvascular damage and dysfunction. TG is better suitable to differentiate between older patients with pRP and sRP.

Furthermore, in presence of cardiovascular disease, TG appears to be a more reliable technique than nCS for differentiating between patients with pRP and sRP.

Disclosure of Interest: None declared

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FRI0599 THE RELEVANCE OF THERMOGRAPHY AND NAILFOLD CAPILLAROSCOPY IN OLDER PATIENTS WITH PRIMARY AND SECONDARY RAYNAUD'S PHENOMENON

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Background: Raynaud's phenomenon (RP) is defined as episodic attacks of artery and arteriole vasoconstriction. To differentiate between the benign RP (pRP) and the form associated with connective tissue diseases (sRP) the capillary morphology can be studied using nailfold capillaroscopy (nCS). However, abnormal morphology can also be caused due to age-related changes and has been described in patients with diabetes and cardiovascular disease. In addition, this technique cannot provide functional information.

Thermal imaging (thermography; TG) is a non-invasive technique which enables quantification of cutaneous blood vessel function. In veterinary medicine, thermal

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Public health, health services research and health economics

FRI0600 METHODS FOR THE ANALYSIS OF ADHERENCE DATA FROM A MEDICATION EVENT MONITORING SYSTEM (MEMS): A SYSTEMATIC REVIEW

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Background: Medication adherence can be measured with several methods: medication bottles with an electronic cap are regarded as the gold standard. The cap contains an electronic device which records the date and time of each