

Microcirculatory Alterations in Patients with Diabetic Nephropathy: Evaluation by Video Capillaroscopy

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ABSTRACT

Background and Aims: Diabetic nephropathy (DN), a microvascular complication of diabetes mellitus (DM) is the most common cause of end-stage renal failure. Nailfold video capillaroscopy (NVC) represents an effective method in the early diagnosis of diabetic complications. Only a few researches investigated the relationship between DN and NVC. The aim of our study is to evaluate nailfold capillaries in type 2 DM patients (pts) to determine any correlation between the development of nephropathy and changes in microcirculation.

Materials and Methods: We underwent NCV 46 pts (25M and 21F) affected by T2DM and 40 healthy individuals (22M and 18F). T2DM pts were separated into groups of normoalbuminuric, microalbuminuric and macroalbuminuric DN stages according to the albumin/creatinine ratio. GFR was evaluated using the CKD-EPI formula. We used Videocap 3.0, 200x magnification (DS Medica, Italy).

Results: Pts with albuminuria had more microhemorrhages (12.6%), capillary aneurysms (18.3%), bizarre capillaries (42.8%), bushy capillaries (29.8%) and greater tortuosity (68.8%) than the control group. Only tortuosity was significantly correlated with albuminuria ($p < 0.05$).

Conclusions: Our data demonstrate that NVC represents a very useful diagnostic tool also in the evaluation of microcirculatory alterations that occur in ND, confirming the results of the few clinical studies existing in the literature.

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