

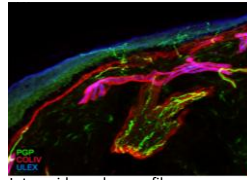
Symptoms and functional testing in morphologically defined small fibers neuropathy (SFN).



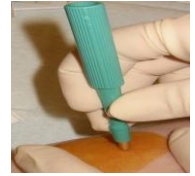
Dell'Aversana D. - Masciarelli F. - Iodice R. - Vitale F. - Caporaso G. - Dubbioso R. - Ruggiero L. - Provitera V. - Tozza S. - Santoro L. - Manganelli F. – Nolano M.

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Objectives: small fibers neuropathy (SFN) refers to damage of somatic and autonomic C-fibers and A-delta fibers. Skin biopsy associated to clinical symptoms and/or signs allows to diagnose definite SFN. The aim of this study was to evaluate the sensitivity of questionnaires and functional tests compared to skin biopsy.



Intraepidermal nerve fibers



3mm punch skin biopsy

Materials and methods: we observed 74 SFN patients (F/M=57/17) with sensory and autonomic symptoms and signs, normal nerve conduction studies and reduced intraepidermal nerve fibers density (IENFD) at skin biopsy. All patients underwent assessment of sensory and autonomic symptoms through Composite Autonomic Symptoms Score (COMPASS-31) and SFN-Symptoms Inventory Questionnaire (SFN-SiQ). Sensory dysfunction was evaluated through quantitative sensory testing (QST) at dorsum of foot, lateral leg, anterior site of thigh and dorsum of hand. Finally, autonomic dysfunction was assessed through cardiovascular reflexes and Dynamic Sweat Test (DST) that, through pilocarpine stimulation at forearm and leg, allowed us to assess postganglionic sudomotor function (sweat gland density, sweat output per gland and sweat output per skin surface).

COMPASS-31

Domini 1: IPOTENSIONE ORTOSTATICA

1. Nell'ultimo anno, si è mai verificato almeno uno dei seguenti sintomi (A-E) in almeno 3 occasioni? (Se non ha risposto "No", vuol dire che non ha mai risposto "Sì")

2. Quanto è alta, cioè che frequenza accade quali sintomo/sintomi? (A-E)

3. Come valutarlo in grado di questi sintomi o sensazioni? (A-E)

4. Nell'ultimo anno, quali sintomi o sensazioni che ha riferito accusò sotto: (A-E)

SFN-SiQ

Small Fiber Neuropathy Symptoms Inventory Questionnaire

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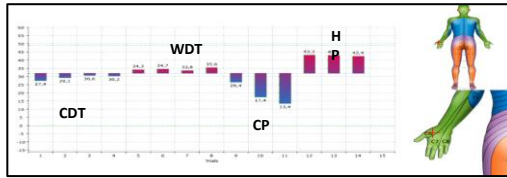
2. Quanto è alta, cioè che frequenza accade quali sintomo/sintomi? (A-E)

3. Come valutarlo in grado di questi sintomi o sensazioni? (A-E)

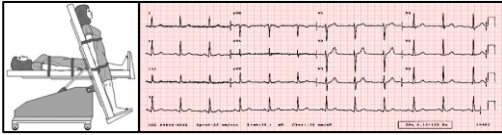
4. Nell'ultimo anno, quali sintomi o sensazioni che ha riferito accusò sotto: (A-E)

COMPASS-31

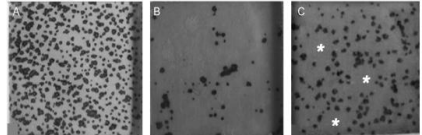
SFN-SiQ



QST. CDT: Cold Detection threshold; WDT: Warm detection threshold; CP: Colp pain; HP: Heat pain

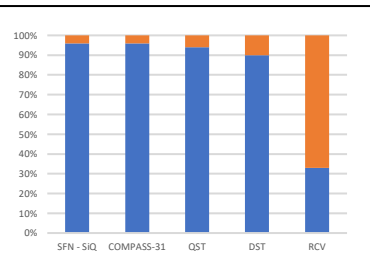


Cardiovascular reflexes tests

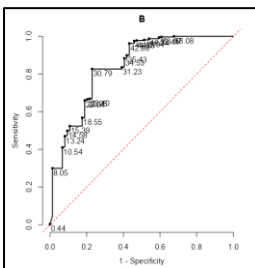


Dynamic Sweat test (DST)

Results: considering abnormal at least two modalities at four examined sites, QST detected a SFN in 94% of cases. Considering abnormal one modality at dorsum of foot, as a single site, QST was altered in 94% with Cold detection threshold (CDT) as the most frequently involved modality (73%). Sweat output after pilocarpine stimulation, evaluated by DST, was reduced in 90% at leg and 88% at forearm. Considering abnormalities in at least two tests, cardiovascular reflexes were impaired in 33%. Considering a total score ≥ 6.5 , SFN-Siq sensitivity was 96%. COMPASS-31 total score correlated with severity of cutaneous denervation ($p < 0.05$).



Sensibilità dei questionari e dei test funzionali



COMPASS-31. Curva ROC: Cut-off ottimale: ≥ 42.8 ; Sensibilità: 96%; Specificità: 57%;

QST	Caratteristiche
≥ 2 modalità sensitive alterate	Sensibilità del 94%
Modalità più alterata al dorso del piede	CDT nel 94% dei casi
Modalità più alterata in qualsiasi sito esaminato	CDT nel 74% dei casi

Discussion and conclusion: dedicated questionnaires and functional sensory and autonomic tests reflect cutaneous denervation with SFN-Siq and QST as the most sensitive tools. This finding may be relevant in the diagnostic process of SFN when skin biopsy is not available.