Small Fiber Neuropathy: a clinical study in a cohort of 40 patients

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Objectives

Small fiber neuropathy (SFN) involves selectively small diameter nerve fibers and typically presents with **peripheral pain** and/or symptoms of **autonomic dysfunction**. Diagnosis is made on the basis of clinical features, QST or QSART findings and, overall, consistent **skin biopsy** changes.

We aimed to described **clinical findings** and **diagnostic work-up** in a cohort of SFN patients.

Patient and methods

Clinical findings from **40 consecutive patients** (22 women, 18 men, mean age 60,26±15,61 y) with skin biopsy-proven SFN, were collected, including age at onset, comorbidities, family history, EMG-ENG studies, localization/quality/severity of symptoms, neurological examination, presence of autonomic dysfunction and evolution over time.

Patients underwent an **extensive screening** for identifying the cause of the disorder, including blood tests and enzyme assay for **alpha galactosidase activity on Dry Blood Spot (DBS).**

In a subgroup of patients with idiopathic SFN molecular **analysis for SCN9A** was performed

Discussion

Common complaints in SFN include **paresthesias**, **dysesthesias**, **insensitivity to pain** and autonomic symptoms.

In our cohort of patients, SFN, although usually caused painful symptoms, often occurred with **sensory negative symptoms** without pain.

Clinical evidence of **autonomic involvement** appeared to be quite rare. In a number of cases, both **small and large nerve fibers** were involved, usually in those related to systemic diseases.

None of the patients had enzyme deficiency indicative of **Fabry disease**.

Results

All the patients complained of **sensory disturbances** which were described as **painful** in 58% of the cases. Symptoms mainly involved the **lower limbs**; an exclusive lower limb involvement was reported in 74% of the cases.

Only one patient presented **autonomic dysfunctions**.

In 47,6% of the patients, a **probable cause** of the SFN was identified (**metabolic** or **autoimmune** systemic diseases).

Nerve conduction studies were normal in **64,3%** of the patients, while a **sensory large fiber neuropathy** was detected in the remaining patients.

An associated **large fiber involvement** was more frequently observed in **secondary SFN** (64,3% out of the patients) than in **idiopathic cases** (10 %).

None of the patients had **alpha galactosidase activity <30%** of normal value on DBS. **No SCN9A mutations** were detected in the studied patients.

Age (years)	59,85±15,64
Age of onset (years)	53,22±15,66
Gender (female)	57%
Distal localization	83,30%
Localization:	
Proximal	2,30%
Proximal + distal	14,30%
Lower limbs	73,80%
Upper + lower libs	28,20%
Painful symptoms	52,40%
Autonomic dysfunctions	7%
Pure SFN	64,30%
Abnormal NCS	35,70%
Idiopathic SFN	52,40%
Secondary SFN	47,60%
Glucose intolerance	9,50%
Diabetes	7,10%
DBS α galactosidase activity <30%	0%

Conclusions

SFN is frequently observed in clinical practice. **Distal sensory disorders**, both positive or negative, isolated or each other associated, have to be considered **red flags** for the diagnosis. To date, a well-executed screening of the possible causes leads to **diagnose SFN in about 50%** of the cases.