

Brain white matter and infarct-like lesions in migraine in an Italian cohort

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Together with other headache disorders, migraine account for about 20% of outpatient visits to neurologists [1]. White matter lesions (WMLs) and infarct-like lesions (ILLs) are frequently detected with brain imaging techniques in patients suffering from headache [2]. The aim of the study was to evaluate the prevalence of WMLs and ILLs in an Italian cohort of patients suffering from headache.

METHODS

Retrospective, observational, cohort-study.

Inclusion criteria: (i) admitted at the Headache Center in 2012, (ii) undergoing MRI scan, (iii) diagnosed with a primary headache disorder.

Exclusion criteria: (i) secondary headache, (ii) major comorbidities or history of organic diseases, (iii) conditions associated with brain hyperintensities without migraine (including poor controlled hypertension and cardiac disease, diabetes mellitus/endocrine dysfunction, onco-hematological diseases, demyelinating disorders of the central nervous system, repetitive head trauma).

Clinical and medication data were collected through a validated interview [3]. Headache was classified following the 2nd ICHD revision [4].

Brain MRI were performed on 1.5 T magnet device, with T1-weighted, T2-weighted fast spin echo and FLAIR sequences in axial planes. ILLs and WMLs were rated following previous study paradigm [5].

We compared the prevalence of WMLs and ILLs depending on patients diagnosis, adjusting for potential confounding factors such as age and sex.

Table 1. Demographic data of the study cohort

	M	MA	CH	MOH
Number	721	69	7	27
Female	569 79%	49 71%	2 29%	25 93%
Mean age	36.2	36.7	35.5	43.3
WMLs	77 10.7%*	6 8.7%*	1 14.3%*	7 25.9%*
ILLs	82 11.4%*	6 8.7%*	3 42.9%*	4 14.8%*

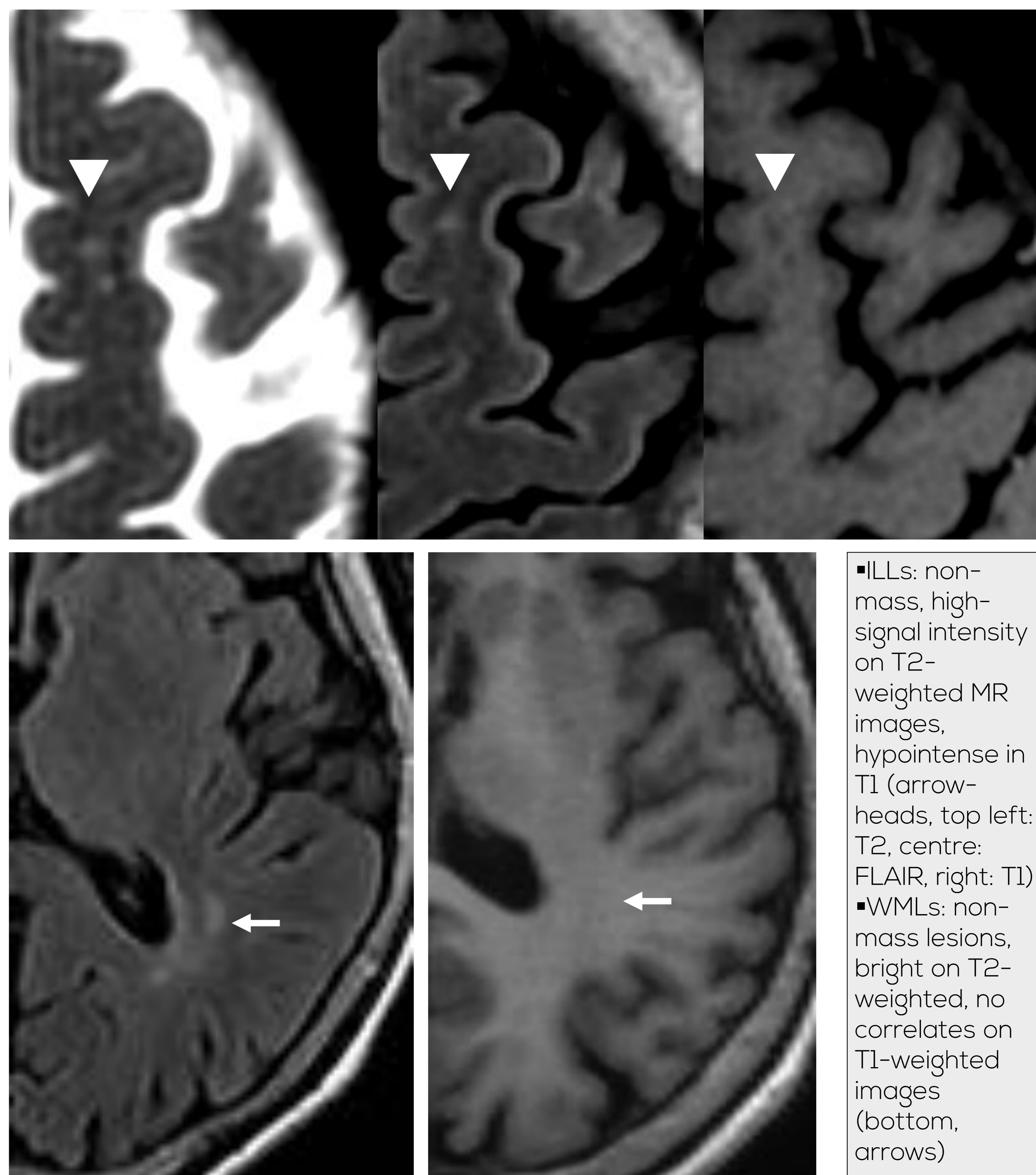
* p<.05. Abbreviations: CH=cluster headache; ILL=infarct-like lesions; M=migraine without aura; MA=migraine with aura; MOH=medication overuse headache; WMLS=white matter lesions.

RESULTS

824 patients were enrolled: 721 (87.5%) had migraine without aura (M), 69 (8.3%) had migraine with aura (MA), 27 (3.2%) had medication overuse headache (MOH), 7 (0.8%) had cluster headache (CH) (Table 1).

Patients with MOH and CH had significantly higher prevalence of WMLs compared to patients with M or MA (p<.05) (Table 1).

Moreover, ILLs were significantly more frequent among patients with CH compared to M and MA (p<.05).



■ ILLs: non-mass, high-signal intensity on T2-weighted MR images, hypointense in T1 (arrow-heads, top left: T2, centre: FLAIR, right: T1)
■ WMLs: non-mass lesions, bright on T2-weighted, no correlates on T1-weighted images (bottom, arrows)

TAKE-HOME MESSAGE

Our data confirm the association between WMLs and ILLs with primary headache disorders, also for an Italian cohort [1,2,5].

MOH was associated with the highest prevalence of WMLs, and had increased risk of ILLs compared to M and MA.

In our cohort, ILLs prevalence in M and MA is within the ranges (2-22%) described in literature, while WMLs occurrence rate is at the lower border of reported ranges (10-74%) [1,2,5].

Population-based assessment should be performed in order to better define prevalence and implications of WMLs and ILLs in headache disorders in the Italian population.

References

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