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### Presentation Details

Control #: 126

Presentation Time: talk: 6 minutes + 2 minutes discussion

Presentation Title: Increased signal intensity of dentate nucleus in multiple sclerosis patients with history of higher gadolinium-enhanced MRI scans

Presentation Number: B-0998

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Session Number: SS 1011b

Session Title: Contrast media and perfusion imaging

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Room: 21/M 5

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### Below is a view of your accepted abstract:

**Purpose:** It has been mentioned that there is an increased probability of hyperintensity of dentate nucleus [DN] with more gadolinium [GAD]-enhanced MRI exams. Here, we have assessed this event in a group of multiple sclerosis [MS] patients with history of multiple GAD-enhanced MRI exams.

**Methods and Materials:** Totally 140 MS patients [mean age: 36.1±9.3 years (19-64); 86% female] with history of multiple GAD-enhanced MRI scans and 21 healthy controls were enrolled. DN hyperintensity was assessed visually in unenhanced T1-weighted MRI; signal intensity ratio [SIR] was calculated by setting region of interests [ROIs] on DN and pons and dividing DN SI into pons SI. Two groups of patients and controls and different patient subgroups [classified based on total number of MRI scans (more than 4 times versus others)] were compared regarding mean SIR and visual hyperintensity.

**Results:** Totally, 83 patients received contrast more than 4 times [68%]; among them, 26 showed DN hyperintensity [31.3%] while there was not hyperintensity in other patients and controls [both  $P < 0.02$ ]. Mean SIR in patients and controls was  $1.10 \pm 0.07$  and  $1.04 \pm 0.02$ , respectively [ $P < 0.001$ ]. Mean SIR was  $1.14 \pm 0.04$  in DN hyperintense patients and  $1.09 \pm 0.07$  in other patients [ $P < 0.001$ ]. Mean SIR in patients with higher contrast injection ( $> 4$ ) was  $1.12 \pm 0.7$  while it was  $1.06 \pm 0.04$  in other patients [ $P < 0.001$ ]; after deleting patients with DN hyperintensity, these figures were  $1.11 \pm 0.08$  and  $1.06 \pm 0.04$ , respectively [ $P < 0.001$ ]. Correlation coefficient of SIR with contrast injection time was 0.66 [ $P < 0.001$ ].

**Conclusion:** SI and visual DN hyperintensity are increased in more contrast injections. This could be due to tissue deposition of GAD. The clinical importance of this phenomenon should be assessed in future studies.

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I confirm that Dr. Maryam Mohammadzadeh has presented above accepted article at European Congress of Radiology 2018.

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Hamed Naghibi:

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