Olea Medical® announces the recently published AJNR paper that brings new evidence on clinical and economic value of Bayesian post-processing in MR imaging

"Bayesian Estimation of Cerebral Perfusion Using Reduced-Contrast-Dose Dynamic Susceptibility Contrast Perfusion at 3T" by Nael K(1), Mossadghi B(1), Boutelier T(2), Kubal W(1), Krupinski E.A(1), Dagher J(1) and Villablanca J.P(3) has been recently published in the American Journal of Neuroradiology.

This prospective study was performed by the Department of Medical Imaging at the University of Arizona. Investigators obtained DSC MR perfusion in 20 patients using half-dose (HD: 0.05 mmol/kg) and full-dose (FD mmol/kg) of Gadolinium-based contrast. Comparative quantitative and qualitative analyses were performed after post-processing of DSC datasets by block circulant singular value decomposition (cSVD) and Bayesian probabilistic methods. According to Dr. Kambiz Nael, principal investigator: "Using the Bayesian probabilistic method, reduced-contrast-dose brain DSC perfusion is feasible at 3T, with qualitative and quantitative results comparable with a full-dose control group."

The results showed Bayesian method outperformed the cSVD technique for reduced-contrast-dose DSC perfusion, in which the SNR was lower. This was reflected in a higher qualitative and quantitative correlation between HD and FD data in Bayesian-processed data in comparison with cSVD. "Our data support the hypothesis that the inherent insensitivity of the Bayesian method to low SNR can provide acceptable measurement of cerebral perfusion in comparison with FD scans,” says principal investigator, Dr. Kambiz Nael.

DSC perfusion has been increasingly used in conjunction with other contrast-enhanced MR applications and there is a need for contrast-dose reduction when feasible. Dr. Nael states that the Bayesian method provides a viable option for performing DSC perfusion in conjunction with other enhanced sequences, without the need for double-dosing patients. This can also result in reduction of nephrogenic systemic fibrosis (NSF) risk in patients with borderline renal function and potentially reduce in health-care cost.

"The Bayesian method for MR and CT perfusion post-processing is today part of our standard Olea Sphere® package for Neuroradiology. The superiority of this method has been demonstrated in digital phantoms and animal models (4), (5), (6). Dr Nael’s study provides valuable data to document the clinical and economic value of our innovative post-processing methods in clinical practice,” says Fayçal Djeridane, CEO of Olea Medical.

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About Olea Medical®:
Olea Medical® designs and markets innovative medical imaging applications that significantly improve diagnostic processes and treatment evaluation. Olea Medical® aims to become the leading provider of safe and accurate medical imaging software.

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