Claret Medical, GLG Consulting, Guidepoint Global, Imperative Care, Medtronic, Rebound, StimMed. 4; C; NeXtGen Biologics, RAPID Medical, Claret Medical, Cognition Medical, Imperative Care (formerly the Stroke Project), Rebound Therapeutics, StimMed, Three Rivers Medical.

E-066

STRUCTURED REPORTING OF ANEURYSM RUPTURE RISK UTILIZING GEOMETRIC AND HEMODYNAMIC ANALYSIS (STARR) – A SOPHISTICATED APPROACH TOWARDS PATIENT COUNSELING

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Introduction/Purpose Counseling of patients harboring unruptured intracranial aneurysms (UIAs) has remained challenging despite the availability of several risk scores assessing the aneurysm rupture risk for individual patients. However, besides aneurysm size and simple morphological features no advanced hemodynamic or geometric factors have been used in every patient counselling so far, although recent research has identified several of these factors to be associated with aneurysm rupture risk. The structured report of several geometric and hemodynamic aneurysm features was developed to amend counseling of patients with UIAs in everyday clinical practice.

Material and Methods Based on current state-of-the-art and experiences from daily clinical practice a selection of morphological and hemodynamical parameters (5 parameters each, figure 1) that have been associated with aneurysm rupture risk was generated. Next, a structured report was designed such that these parameters are presented in an intuitive and clear manner. Color legends from red to green are used to visualize patient specific rupture risk. Special care was taken to account for non-uniform parameter distributions. The design study was evaluated with a clinical expert. For the extraction of these parameters customized software tools were used that can be carried out remotely. The patient image data is semi-automatically processed yielding the structured report.

Results We developed a semi-automatic workflow to incorporate current state-of-the-art aneurysm rupture risk analysis into a structured report such that the information is available in the daily clinical use without dedicated hardware or engineers required at the hospital. All listed parameters were extracted based on recent literature.

Conclusion Structured reporting of geometric and hemodynamic analysis of IAs is feasible and can be combined for an aneurysm specific rupture risk stratification amending a more sophisticated tool to patient counseling harboring UIAs. Figure legend: Illustration of the structured report comprising patient specific information (e.g. age, sex,...), the PHASES and UIATS scores as well as five different views showing the shape of the aneurysm from different angles as well as the aneurysm and its parent artery. Five morphological parameters are combined, as well seven hemodynamical parameters. All parameters are

ANEURYSM RUPTURE RISK ASSESSMENT

Abstract E-066 Figure 1

presented in a structured manner. Tool tips allow for explanation for the clinical expert as well as the patients.

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E-067

IMPORTANCE OF FIRST PASS REPERFUSION IN ENDOVASCULAR STROKE CARE – INSIGHTS FROM STAR

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