Are gain values altered by manual data selection upon completion of testing all semicircular canals with two different V-HIT systems?

Abrahamsen, Emil Riis; Skals, Regitze Kuhr; Hougaard, Dan Dupont

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ARE GAIN VALUES ALTERED BY MANUAL DATA SELECTION UPON COMPLETION OF TESTING ALL SEMICIRCULAR CANALS WITH TWO DIFFERENT V-HIT SYSTEMS?

Abstract: (Maximum 100 words)
The objective was to test if the gain values of all six semicircular canals (SCCs) were significantly altered by manual data selection after performing the video Head Impulse Test (v-HIT) with two different v-HIT systems. 120 subjects underwent four v-HIT tests. Manual data selection was done by an experienced ENT Specialist who removed any noise or artifacts. Gain values before and after manual data selection were compared. Results showed significantly altered gain values only with testing of the vertical SCCs with one of the v-HIT systems. None of the two v-HIT systems revealed any clinically important effects of manual cleaning.

Introduction: (Maximum 100 words)
V-HIT evaluates the function of the SCCs. V-HIT systems have detection algorithms integrated in their software. These algorithms detect head impulses containing either head or eye movements that do not meet certain predefined criteria. However, it is often a prerequisite for the clinician to manually clean up the dataset. This renders the test susceptible to a certain amount of subjective assessment. It has not yet been tested whether gain values are significantly affected by manual data selection or if cleaning done by the incorporated detection algorithms is sufficient.

Materials and Methods: (Maximum 50 words)
120 subjects with neither vestibular nor neurological disorders underwent four tests of all six SCCs with either EyeSeeCam® or ICS Impulse®. An experienced ENT Specialist manually cleaned all the tests of noise and outliers. A paired T-test was performed to compare gain values based on unsorted and sorted data.
Results: (Maximum 50 words)
Listed as the estimate (average difference) and the p-value. EyeSeeCam:
Right/left horizontal SCC: 0.00088 (0.69)/0.00004 (0.95). Vertical SCCs:
Estimates from 0.00858 to 0.00637 and p-values from 0.27 to 0.79. ICS Impulse:
Right/left lateral SCC: 0.00071 (0.26)/0.00159 (0.06). Vertical SCCs: Estimates
from 0.00217 to 0.01357 and p-values from 0.00 to 0.05.

Conclusions: (Maximum 50 words)
Gain values with EyeSeeCam® were not significantly altered by manual data
selection. Gain values with ICS Impulse®, however, were significantly altered by
manual data selection with testing of the vertical SCCs. None of the two v-HIT
systems revealed any clinically important effects of manual cleaning.

Previously presented: No