

POSTER PRESENTATION

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Cognitive function in Familial Adenomatous Polyposis: anyone out there listening?

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Background

Preliminary data suggests the APC protein is critical for dependent pathways in the cochlea and may be important in cognition. Abnormal audiometries have been documented in Familial Adenomatous Polyposis (FAP). We studied cognitive function among patients with FAP.

Methods

FAP patients were recruited for an IRB (Institutional Review Board) approved study assessing intelligence using the Kaufman Brief Intelligence Test (KBIT-2), which provides Verbal, Nonverbal and Composite IQs. The KBIT-2 was administered and scored by individuals experienced in administration of psychometric measures. Mean scores were analyzed and compared to standard normal ranges.

Results

44 subjects from 42 families (22 men), mean age of 42 years were included. KBIT-2 Composite IQ score was 98.4 ± 12.4 , (95% CI (confidence interval) 94.5-102.3) which is within the average range of 90-109. 27 % of patients scored below average (less than 90) and 15% scored above average (greater than 109), not a significant imbalance (sign test $p=0.33$). Nonverbal IQ scores show no difference from average, mean=100.5; 24% scored below and 27% scored above average. Verbal scores were 95.5 ± 12.0 (95% CI 91.7 -99.2) significantly lower than average (one-sample T-test $p=0.020$). There is an imbalance among patients with 27% below and 7% above the average range and a tendency toward lower than average scores (sign test $P=0.06$). The mean

number of points by which Nonverbal IQ exceeded Verbal IQ was 5.0 ± 12.5 (95% CI 1.1 -9.0), (one-sample T-test $p=0.013$). The non-verbal score exceeded the verbal score for 27 patients (65.9%), while the verbal score was larger for only 10 patients (24.4%) (Sign test $p=0.008$).

Conclusion

Composite IQ scores suggest that FAP patients do not have lower IQ from the general population. However the verbal scores of FAP patients which are dependent on hearing are significantly lower than average and may reflect abnormal audiometries or other effects of the APC mutation on cognitive function.

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