Linkage analysis of schizophrenia in African-American families.

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Abstract: While many studies have sought a window into the genetics of schizophrenia, few have focused on African-American families. An exception is the Project among African-Americans to Explore Risks for Schizophrenia (PAARTNERS), which seeks to identify novel and known risk variation for schizophrenia by genetic analyses of African-American families. We report a linkage study of diagnostic status in 217 African-American families using the Illumina Linkage Panel. Due to assumed incomplete and time-dependent penetrance, we performed linkage analysis using two different treatments of diagnosis: (1) treating both affected and unaffected individuals as informative for linkage (using the program SIBPAL) and (2) treating only affected individuals as informative (using the program MERLIN). We also explore three definitions of affected status: narrowly defined schizophrenia; one broadened to include schizoaffective disorder; and another including all diagnoses indicating psychosis. Several regions show a decrease in the evidence for linkage as the definition broadens 8q22.1 (rs911, 99.26 cM; SIBPAL p-value [p] goes from 0.006 to 0.02), 16q24.3 (rs1006547, 130.48 cM; p from 0.00095 to 0.0085), and 20q13.2 (rs1022689, 81.73 cM; p from 0.00015 to 0.032). One region shows a substantial increase in evidence for linkage, 11p15.2 (rs722317, 24.27 cM; p from 0.0022 to 0.0000003); MERLIN results support the significance of the SIBPAL results (p=0.00001). Our linkage results overlap two
broad, previously-reported linkage regions: 8p23.3-p12 found in studies sampling largely families of European ancestry; and 11p11.2-q22.3 reported by a study of African-American families. These results should prove quite useful for uncovering loci affecting risk for schizophrenia.

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