

Clinical Perspective

Genes Associated with Alcohol Dependence

There is good evidence from studies of families and twins that genetics plays an important role in the development of alcoholism. However, hundreds of genes likely are involved in this complex disorder, with each variant contributing only a very small effect. Therefore, identifying individual risk genes is difficult. Using a new approach that combines genome-wide association studies (GWAS) with information about which human proteins interact with one another, researchers from the University of Iowa and Yale University Medical School have identified a group of 39 genes that together are strongly associated with alcoholism. “The discovery of these genes may open a new window into the biological mechanisms underlying this alcoholism disorder,” says Shizhong Han, PhD, UI assistant professor of psychiatry and corresponding author of the study. Han and his colleagues based their approach for identifying risk genes on the idea that genes may be “guilty by association” of contributing to the disease – that although many different genes contribute to alcoholism, these genes, or more precisely, their protein products, are not independent of each other. “The proteins made by these genes could be neighbors, or they could be part of the same functional biological pathway,” Han explains. “We took advantage of their biological relatedness to identify a network of genes that interact and together contribute to the susceptibility to alcoholism.” Having identified this network of genes, Han and his colleagues plan to narrow down the group to look for the genes that cause alcoholism. “Eventually, it’s our hope that the findings might help to develop drugs to treat or prevent this disorder.” ·

Sources: University of Iowa Health Care