GENE EXPRESSION AND THE MERIDIAN CHART

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Although it is obvious that the diseases or broad phenotypes that occur in one person are interrelated, the ancient holistic approach in medical treatment, such as acupuncture, has not had much bearing on current genetic research. The network of acupuncture points linked by meridians represent the key stimulation points on human body that lead to relief from certain pains, diseases or reversal of certain conditions. Here we present a novel mechanism to identify candidate disease-causing genes, motivated by the observation that acupuncture may regulate gene expression by selectively affecting transcription factor assembly.[1] The assumption is that the diseases treated by the acupuncture points along the same meridian are related. The method used here is hierarchical clustering of diseases based on disease dissimilarities in terms of their corresponding treatment acupoints along the meridians. The clustering results demonstrated closer relationship among common comorbid conditions, such as type II diabetes and coronary disease. A disease-meridian network diagram was also developed to facilitate the identification of such relationships. Further analysis of the disease-causing genes of the clustered diseases suggested linkage between Ren meridian and several signaling pathways. Although the accuracy of this mechanism is limited by the completeness of the acupuncture function database as well as the terminology differences between acupuncture function terms and MeSH disease terms, nevertheless, this is encouraging and may provide novel insights into genetic studies for certain diseases. Research should be supported to provide a better understanding of the mechanisms involved, and such research may lead to improvements in treatment.

References

1. Ventura C, CAM and Cell Fate Targeting: Molecular and Energetic Insights into Cell Growth and Differentiation, *eCAM* 2005; 2(3)277–283.