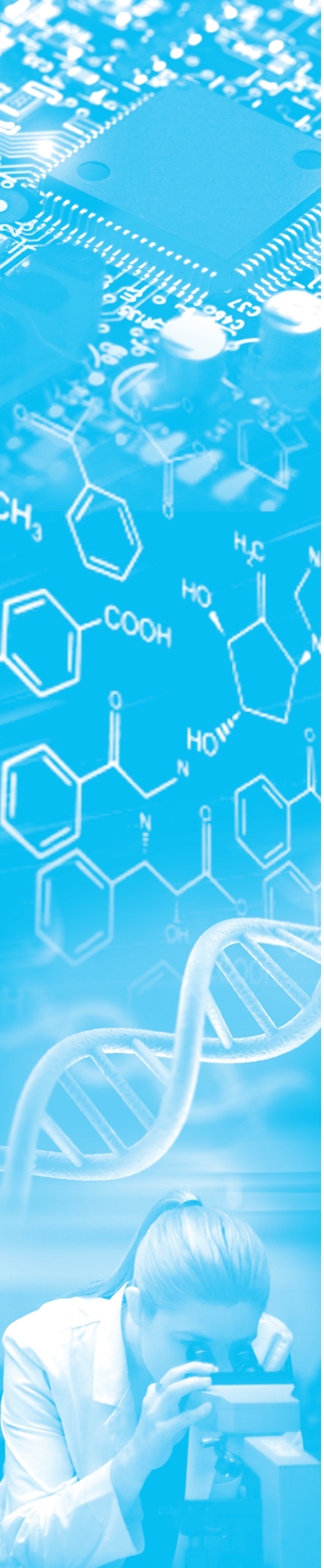

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Method for Compiling Genomic Database to Establish Diagnostic Biomarkers

Complex diseases such as Chronic Fatigue Syndrome (CFS) exhibit a wide array of symptoms and hence are hard to diagnose. Currently most complex disease do not have any specific diagnostics tests and health professionals primarily depend on feedback from the patients, which can be variable and unreliable. This necessitates collection of genetic data and information on symptoms from a wide variety of subjects in order to develop a database that might be useful in developing diagnostic or therapeutic procedures for complex diseases. The proposed invention is a method of using social media for recruitment, implementing online platform to collect both genomic data and responses to a symptoms questionnaire and utilizing this information to create a database containing genetic information associated with specific complex diseases.

Technology

Dr. Nancy Klimas, Kelly Hilton and Kristina Gemayel from the Institute of Neuro-Immune Medicine at NSU, developed a novel system of collecting data and compiling a genomic database for complex diseases. One of the major challenges in gathering information associated with complex diseases is the recruitment of substantial number of patients. To overcome this issue, the researchers utilized social media platforms for recruitment thus getting access to a geographically diverse population of patients. Data collection was done through an online platform where patients were required to complete a questionnaire associated with symptoms of the complex disease. The participants were also requested to go through genetic testing using a commercially available genetic tool kit and upload the information electronically to the online data collection platform via a secure portal. The genomic data collected through this method was de-identified and analyzed to gain better understanding of genetic patterns associated with complex diseases such as CFS. The information obtained by evaluating the responses to the online questionnaire coupled with analysis of genomic data will enable researchers to compile a database and possibly identify highly specific diagnostic genetic markers of these complex diseases.

Application

This method of utilizing a secured online portal for the collection of genomic data can be used to develop a genomic database for any complex disease.

The information in this database can be utilized to determine genetic patterns and possible diagnostic biomarkers that can be associated with the complex disease.

Advantages/Benefits

- Utilizing social media for patient recruitment offers a highly cost effective method to build a robust and geographically diverse database.
- Currently most complex diseases do not have a specific diagnostic marker that can be used to develop and conduct a lab based assay for its diagnosis. This method of compiling a database and analyzing genomic data will offer opportunity of identifying specific diagnostic markers for complex diseases.

Status of Development

An online genetic data collection platform with questionnaires was created and used to collect data for an IRB approved clinical study. This database now has genomic data and information on symptoms of over 500 CFS patients spread across multiple countries including USA, UK, Australia, New Zealand, and Italy.

Patent Status

Provisional Patent Application submitted on 29th June, 2017.

Information on Inventors

- Dr. Nancy Klimas is the Director of the Institute of Neuro Immune Medicine. She is Chair and professor of Medicine at the Department of Clinical Immunology, College of Osteopathic Medicine at NSU.
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