Activity Outline
FDA Grand Rounds:
Ethnicity- and Gender-related Differences in Alzheimer's Disease
January 11, 2018
12:00 PM-1:00 PM
FDA White Oak CSU 2031

Series Description
The FDA Grand Rounds is webcast every other month to highlight cutting-edge research underway across the agency and its impact on protecting and advancing public health. Each session features an FDA scientist presenting on a key public health challenge and how FDA is applying science to its regulatory activities.

Session Description
Minorities and women are particularly vulnerable to Alzheimer's disease (AD). Former Alzheimer's Association President and CEO Harry Johns noted that relative to Caucasians "the threat [of AD] is even more substantial in the African-American and Hispanic communities." This is partially related to the higher incidence of dementia and AD as well as increased severity of symptoms in African Americans. That increased incidence or risk remains high, despite adjustments for education, family dementia histories, and hypertension co-morbidity. Socioeconomic status, other health conditions, health care access, and delays in physician consultation likely contribute to--but do not explain--all those disparities.

Increased research into African Americans and other minority populations with AD is crucial to the goals of precision medicine and yet this is traditionally an understudied population. This does, however, appear to be changing. Studies indicate the advantage of using different approaches to understanding what is likely to be a complex picture of AD-related ethnicity differences.

Women have a higher incidence of AD at later ages. For example, among people who are 71 years of age or older, 16% of women have AD compared with only 11% of men. Better understanding of sex differences involved in the cause and progression of AD could contribute to better drugs and other types of interventions to slow the disease progression.

This presentation will discuss research into protein levels in post-mortem African American and Caucasian brain tissue from both genders to explore ethnicity- and gender-related differences. The selected proteins include those thought to be critically involved in AD. Those proteins were examined in samples of the middle temporal gyrus that were matched for age at death since this region is critically involved in language processing and generation and has been shown to be significantly affected by AD.

Session References

1. Manly, J.J. and R. Mayeux, Ethnic differences in dementia and Alzheimer's disease, in Critical Perspectives on Racial and Ethnic Differences in Health in Late Life, N.A. Anderson, R.A. Bulatao, and B. Cohen, Editors. 2004, National Academy Press: Washington, DC. p. 95-142.
2. Alzheimer's, A., 2014 Alzheimer's disease facts and figures. Alzheimers Dement, 2014. 10(2): p. e47-92.
3. Tang, M.X., et al., Incidence of AD in African-Americans, Caribbean Hispanics, and Caucasians in northern Manhattan. Neurology, 2001. 56(1): p. 49-56.
4. Steenland, K., et al., A Meta-Analysis of Alzheimer's Disease Incidence and Prevalence Comparing African-Americans and Caucasians. J Alzheimers Dis, 2015. 50(1): p. 71-6.
5. Mehta, K.M. and G.W. Yeo, Systematic review of dementia prevalence and incidence in United States race/ethnic populations. Alzheimers Dement, 2017. 13(1): p. 72-83.

Series Objectives

1. Discuss the research conducted at the FDA.
2. Explain how FDA science impacts public health.

Session Learning Objectives

After completion of this activity, the participant will be able to:

1. Explain the neurodegenerative protein differences between African Americans and Caucasians of both genders
2. Describe how those protein differences might contribute to the differences in disease severity
3. Discuss the advantages of multiplex technology
4. Explain the importance of this field of research for Alzheimer's disease as well as others.

Target Audience

This activity is intended for physicians, pharmacists, nurses and other scientists within the agency and external community.

About the Presenters

Sherry Ferguson, PhD, is a Research Psychologist in the Division of Neurotoxicology at FDA's National Center for Toxicological Research, where she has worked since 1990. For more than 25 years, she has been involved in neurotoxicological research. Dr. Ferguson received her PhD in Physiological Psychology from the University of Wisconsin at Madison. She is on the editorial board of several scientific journals and is a past president of the Developmental Neurotoxicology Society (formerly, the Neurobehavioral Teratology Society). She holds adjunct status at the University of Arkansas for Medical Sciences and the University of Arkansas at Little Rock.

Since 2009, Vijayalakshmi (Viji) Varma, PhD, has worked as a research biologist in the Division of Systems Biology in FDA's National Center for Toxicological Research. She received her PhD in Biochemistry and Cell Biology from Manipal Academy of Higher Education, Manipal University, India. For over 13 years, she has been involved in research exploring metabolic syndrome and its comorbidities including obesity, insulin resistance, and obesity-induced inflammation, in clinical translational studies and in disease modeling, using in vitro cell culture and in vivo rodent systems. She is currently leading research efforts to explore the impact of obesity on drug-induced toxicities.

Schedule

Date/Time/Place	Lecture Title	Lecturers
Thursday, January 11, 2018 12:00 PM-1:00 PM FDA White Oak CSU 2031	FDA Grand Rounds: Ethnicity- and Gender-related Differences in Alzheimer's Disease	Sherry Ferguson, PhD and Vijayalakshmi (Viji) Varma, PhD

Remote Access Instructions

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https://collaboration.fda.gov/grandroundsjan1118/event/registration.html

For technical assistance please contact Jeffery Rexrode at Jeffery.Rexrode@fda.hhs.gov.

HHS/LMS Registration Link
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