

AMERICAN GASTROENTEROLOGICAL ASSOCIATION FOUNDATION-SUCAMPO-ASP DESIGNATED RESEARCH AWARD IN GERIATRIC GASTROENTEROLOGY



AWARD RECIPIENT

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PROJECT

“SEX-SPECIFIC EFFECT OF ALCOHOL AND OBESITY AND ADIPOCYTOKINES IN GERIATRIC FATTY LIVER DISEASE IN A PROSPECTIVE POPULATION-BASED COHORT: RANCHO BERNARDO STUDY”

MENTORSHIP TEAM

ELIZABETH BARRETT-CONNOR, MD

LAURA L. DUGAN, MD

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Fatty liver disease (FLD) is the most common cause of elevated serum aminotransferase levels in the United States. Approximately 20-30% of the US adult population may have FLD. A small portion of these individuals may develop progressive liver disease resulting in steatohepatitis, fibrosis, cirrhosis, and hepatocellular carcinoma. Although FLD is now the most common liver disease in the United States, there is limited data on geriatric FLD and its effect on long-term morbidity and mortality in older Americans.

Recent epidemiologic studies suggest that obesity and alcohol use are independent as well as synergistic risk factors of elevated serum aminotransferase levels in young adults. Based upon previously published epidemiologic studies, women are more susceptible to alcohol-induced FLD. However, obesity-induced FLD is more common in men, probably due to higher rates of visceral adiposity in men. Due to the fact that patients with either alcoholic or non-alcoholic FLD are studied in a mutually exclusive manner, studies based upon either a diagnosis of alcoholic or non-alcoholic liver disease create an important limitation in published literature. However, in a real-world setting, there is a complex interplay between alcohol and obesity with respect to the increased risk of FLD over a lifetime. There is limited data on sex-specific association of alcohol and obesity and its interaction with FLD in a community-dwelling cohort of older adults in the United States. Furthermore, the American Gastroenterological Association's (AGA) report from the future trends committee

states the senescent liver may be more susceptible to alcohol- or diet-induced liver injury. This is especially relevant in older adults due to long-term exposure to alcohol use and obesity. Therefore, we hypothesize that alcohol and obesity are not only independent predictors, but their synergistic interaction multiplies the risk of FLD and associated mortality in older men and women. Because both alcohol- and obesity-associated FLD is connected to cytokine imbalance, we hypothesize that these sex differences are mediated through serum adiponectin, leptin, and/or Interleukin-6 levels.

In this project, we will evaluate the sex-specific link between alcohol consumption, obesity, and their interaction with FLD in older adults. Additionally, we plan to relate cytokine imbalance to the effect of alcohol and obesity on FLD cross-sectionally, and then longitudinally to examine whether cytokine imbalance explains the long-term mortality associated with FLD in a geriatric population.

It is a great privilege and honor to be chosen by an expert panel comprised of top scientists and researchers in the field of gastroenterology for the AGA Foundation-Sucampo-ASP Designated Research Award in Geriatric Gastroenterology. With the guidance of my mentors Elizabeth Barrett-Connor, MD, David Brenner, MD, and Laura L. Dugan, MD, this award will provide me with the protected time needed to gather preliminary data. The preliminary data obtained will be used to procure future National Institutes of Health funding to investigate the effects of alcohol, obesity, and adipocytokines on outcomes related to FLD in the elderly.