Relationship Between Homocysteine, Coronary Risk Factors, C-Reactive Protein, Bone Mineral Density and Carotid Circulation Among frail elderly

Thesis

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دراسة العلاقة بين الموموسيستايين وعوامل الخطورة لضيق الشرايين التاجية و بروتين سي التفاعلي و كثافة العظام و الدورة الدموية بالشريان السباتي في المسنين المصابين بالوهن

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List of abbreviation

AD	Alzheimer's disease
ADL	Activities of dialy living
AHA	American Heart Association
AICD	anemia of inflammation or chronic disease
BMD	bone mineral density
BP	Blood pressure
CES-D	Center for Epidemiological Studies-Depression scale
CHD	Coronary heart disease
CHS	Cardiovascular Health Study
CIMT	Carotid intema media thickness
CNS	Central nervous system
CRP	C-reactive protein
CVD	Cardiovascular disease
DEXA	Dual energy x-ray absorptiometry
DHEAS	dehydroepiandrosterone sulfate
DM	Diabetes mellitus
GDS	Geriatric depression scale
GH	Growth hormone
HCY	Homocystiene
HD	Heart disease
HDL	High density lipoprotein
IADL	Instrumental activities of dialy living
IGF	insulin-like growth factor
IL	Interleukin
LDL	low density lipoprotein
MCI	mild cognitive impairment
MI	myocardial infarction
MMSE	Mini-mental state examination
OA	Osteoarthritis
PBMCS	peripheral blood mononuclear cells
SAA	Serum amyloid-A
SD	Standard deviation
SES	socio-economic status
SOF	Study of Osteoporotic Fractures
SPSS	Statistical Package for Social Science
TG	Triglycerides
TNF	tumor necrosis factor
WHI	Woman Health Initiative
WHO	World Health Organization

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Dedication

I would like to express my deepest appreciation and gratitude to my family who have been very supportive & helpful.

Contents

INTRODUCTION

Frailty is often conceptualized by health care providers as a state of late life decline and vulnerability characterized by weakness and decreased physiologic reserve. Frail older adults are less able to adapt to stressors such as acute illness or trauma. Their increased vulnerability leads to adverse outcomes including falls, institutionalization, disability, and death ***(Fried et al; 2001).***

Most medical practitioners who care for older adults have noted a subset of patients who are clearly in a state of rapid decline, seemingly unrelated to a specific disease state. Other patients who are frail have more subtle signs and symptoms that can be easily overlooked. Old age, itself, does not define frailty. Some patients, despite advanced age, may experience temporary disability related to illness or trauma, but rebound after recovery and return to their baseline. Others may appear robust but tolerate medical stress poorly, and never regain full function following illness or hospitalization. Still others are noted to have gradual but unrelenting functional decline in the absence of apparent stress factors ***(Walston et al; 2010).***

With aging, cardiovascular (CV) diseases become more frequent and complicated. They are usually not isolated, but are

associated with other medical problems and they continue to be the most important cause of morbidity and mortality in the elderly. More than 15% of deaths in the world are due to CV diseases for both women and men >65 years of age ***(Ozturk & Kutlu, 2010).***

With the emergence of evidence showing the prognostic value of frailty in elderly patients with CVD, ongoing efforts are being directed toward incorporating frailty into existing and novel risk prediction models. ***(Afilalo 2011).***

Various authors have highlighted the frequent association between osteoporosis and frailty. Osteoporosis appears to be a good marker of frailty. It is a sign of vulnerability. Hip fracture is the major complication confronting elderly subjects and this too is a major public health problem. Frail subjects seem to be particularly exposed to this complication***. (Crepaldi et al 2005)***

It is important to understand the links between frailty, osteoporosis as the therapeutic approaches may be different or complementary. The efficacy, cost and adverse effects of a purely pharmacological approach aiming to increase BMD or of a multidisciplinary approach aimed at countering the factors associated with frailty may be very different in a frail or a robust aged population***. (Rolland et al 2008)***

AIM OF THE STUDY

To compare frail & healthy elderly regarding Bone mineral density, carotid circulation and serum levels of Homocysteine, coronary risk factors and CRP.

FRAILTY

Definitions of frailty

There is no single best definition of frailty; it does not fit easily with the typical organ specific model of disease. Frailty is theoretically defined as a clinically recognizable state of increased vulnerability, resulting from aging-associated decline in reserve and function across multiple physiologic systems such that the ability to cope with every day or acute stressors is compromised ***(Xue; 2011).***

Several factors complicate the formulation of a definition for frailty. Older adults come from heterogeneous medical, environmental, educational, and psychological backgrounds, so that considerable variation is present in baseline status. Additionally, frailty exists on a spectrum, further increasing the complexity of defining the condition ***(Hamerman; 1999).***

Fried et al defined frailty as: "A physiologic syndrome characterized by decreased reserve and resistance to stressors, resulting from cumulative decline across multiple physiologic systems, and causing vulnerability to adverse outcomes" ***(Fried & Walston 2003).***