Frailty

BHIVA
Dr John Soong

Frailty and HIV
Declarations

- Royal College of Physicians London Fellowship Award hosted NIHR CLAHRC for NWL
- Chelsea & Westminster Joint Research Committee Fellowship Award
Content

• Population ageing and frailty
• Frailty definition and measurement
• HIV and frailty
• How to treat frailty
Number of people aged 60 or over:
World, developed and developing countries, 1950-2050

Note: The group of "developed countries" corresponds to the "more developed regions" of the World Population Prospects: The 2010 Revision. The group "developing countries" corresponds to the "less developed regions" of the same publication.
WORLD REPORT ON AGEING AND HEALTH
Frailty Definitions and purposes

Level of functioning:
- FAM
- iADL
- bADL
- FIM

Level of social support:
- Lives alone
- Friends & Family
- Carers

Nutrition
- MUST

Mobility & Falls risk
- BERG
- STRATIFY

Co-morbidity
- CHARLTON

(In)continence

Anxiety
- Depression
- GDS

Confusion / delirium
- CAM
- AMT

Medicines Optimisation
- Polypharmacy
- Reconciliation
- Rationalization

Acute Diagnosis
- Physiological
- Aggregated
- Track and Trigger
- System
FRAILTY

Mechanisms by Which Adverse Childhood Experiences Influence Health and Well-being Throughout the Lifespan

Accumulated Deficit

Genetic Phenotype

Death

Conception

Adverse Childhood Experiences

Disrupted Neurodevelopment

Social, Emotional, and Cognitive Impairment

Adoption of Health-risk Behaviors

Disease, Disability, and Social Problems

Early Death

FRAILTY
Frailty Model 1: Phenotype

“bio-gerontological observation of physical weakness”

1) Unintentional weight loss
2) Exhaustion
3) Weakness
4) Slowness
5) Low levels of activity

Frailty Model 2: Accumulated Deficit

Frailty Models

**PROS**

- Validated for long term mortality
  - 1-5 year mortality
  - Functional decline
  - Institutionalization
- Physiologically Credible
  - Mouse models
  - Anthropometrics
  - Biomarkers

**CONS**

- Validated mainly on Community Dwelling adults (though increasing evidence for hospital population)
- No absolute consensus on measurement
  - Diverse independent variables
  - Research based measurement techniques with little clinical acceptability

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The Physical and Biological Characterization of a Frail Mouse Model

Jeremy Walston, Neal Fedarko, Huanle Yang, Sean Leng, Brock Beamer, Sara Espinoza, Anne Lipton, Howie Zheng and Kevin Becker
COBRA: a neurology sub-study of POPPY and AgeIV

- Detailed assessment of cognitive function
- CSF examination
- Detailed neuroimaging
Frailty and HIV

• Does HIV cause frailty?

Systematic Review of Prevalence and Predictors of Frailty in Individuals with Human Immunodeficiency Virus

Tom J. Levett, MBChb,* Fiona V. Cresswell, MBChB,† Muzaffar A. Malik, MSc,‡ Martin Fisher, MSc,§ and Juliet Wright, MD*
Caloric restriction reduces age-related and all-cause mortality in rhesus monkeys

Ricki J. Colman, T. Mark Beasley, Joseph W. Kemnitz, Sterling C. Johnson, Richard Weindruch & Rozalyn M. Anderson

Affiliations | Contributions | Corresponding author

Nature Communications 5, Article number: 3557 | doi:10.1038/ncomms4557
Received 12 October 2013 | Accepted 05 March 2014 | Published 01 April 2014

Blood hormone restores youthful hearts to old mice

Protein relieves age-related stiffening and thickening of cardiac muscle.

Amanda Mascarelli

10 May 2013

Researchers have identified a blood hormone that makes ageing hearts in mice look young again. The authors of the study say their finding offers therapeutic potential for the treatment of age-related heart disease, an increasingly common cause of heart failure.

The protein, known as growth differentiation factor 11 (GDF11), circulates at high levels in the blood of young mice but declines with age. In a study published this week in Cell, the researchers report that elderly mice treated with the protein experience a reversal of tissue ageing in the heart.

If proven to be effective in humans, a protein that reverses the effects of ageing in mouse hearts could provide relief for a condition that is otherwise difficult to treat.

Young blood reverses age-related impairments in cognitive function and synaptic plasticity in mice

Saul A Villeda, Kristopher E Plambeck, Jinte Middeldorp, Joseph M Castellano, Kira I Mosher, Jian Luo, Lucas K Smith, Gregor Blari, Karin Lin, Daniela Berdnik, Rafael Wabl, Joe Udeochu, Elizabeth G Wheatley, Bende Zou, Danielle A Simmons, Xinmin S Xie, Frank M Longo & Tony Wyss-Coray

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Received 08 February 2014 | Accepted 16 April 2014 | Published online 04 May 2014
Evidence for interventions: Frailty in Acute Care

Comprehensive geriatric assessment for older adults admitted to hospital: meta-analysis of randomised controlled trials

Graham Ellis consultant geriatrician and honorary senior clinical lecturer¹, Martin A Whitehead consultant geriatrician², David Robinson consultant geriatrician³, Desmond O’Neill associate professor of gerontology⁴, Peter Langhorne professor of stroke care⁵
Timely care for frail older people referred to hospital improves efficiency and reduces mortality without the need for extra resources

Kate M. Silvester, Mohammed A. Mohammed, Paul Harriman, Anna Girolami, Tom W. Downes

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4 Service Improvement, Sheffield Teaching Hospitals NHS Foundation Trust, Sheffield, UK
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A controlled evaluation of comprehensive geriatric assessment in the emergency department: the ‘Emergency Frailty Unit’

Simon Paul Conroy1, Kharwar Ansari2, Mark Williams2, Emily Laithwaite3, Ben Teasdale2, Jeremy Dawson4, Suzanne Mason4, Jay Banerjee2

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4ScHARR, University of Sheffield, Sheffield, UK

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Perioperative Medicine and Frailty

Original research

Frailty and poor functional status are common in arterial vascular surgical patients and affect postoperative outcomes

Judith S L Partridge a, b, *, Matthew Fuller a, b, Danielle Harari a, b, Peter R Taylor d, Finbarr C Martin a, b, *, Jugdeep K. Dh emphasized...
QI: Contextual implementation
Summary

• Frailty is prevalent, associated with ageing but non-fully elucidated pathophysiological pathways may result in presentation in younger cohorts e.g. HIV

• Measurement of frailty should lead to appropriate multidisciplinary interventions which are holistic