

## SHORT NOTES SERIES IN GERIATRIC MEDICINE

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Frailty is defined as diminished ability to perform social activities of daily living often under stressful conditions. The stressful conditions may be physical, mental or psychosocial in nature. A frail person is usually predisposed to disability. Fried's criteria have been devised to define frailty are following:

1. Weight loss of more than 10 lbs in one year
2. Physical exhaustion by self report
3. Weakness as measured by grip strength
4. Decline in walking speed
5. Low physical activity

A progression from frailty to disability may be rapid or gradual depending upon severity of stressors involved. A rapid functional decline leads to hospitalization or institutionalization and puts a frail person at risk of developing irreversible damage or death. However, a gradual decline may be picked up or noticed on routine geriatric assessments and evaluation. A gradual decline may be reversible if it is detected early. Predisposing factors and comorbidities also play an important role.

Sarcopenia is the central factor in pathophysiology of frailty. Various factors such as decreased physical activity, decreased protein, creatine intake, decreased testosterone levels, decreased motor unit activity and increased cytokines have been attributed to decrease in muscle mass in elderly. An approach to sarcopenic frail elderly by determining the stressors and identifying the above mentioned factors, which have lead to decrease in muscle mass, are helpful in managing frailty. Sarcopenia is also an important field of research in geriatrics. It is often responsible for functional decline and disability. Several strategies have been developed to manage sarcopenia and few are still under development.

### Management of frailty

A proper treatment of comorbid condition like diabetes, atherosclerosis, depression, heart and lung ailments, regular screening for preventable diseases, preventing infections plays an important role in management of frailty. Nutrition is another key component in management of sarcopenia especially the nutritional supplements including leucine and other essential amino acids. To increase

muscle strength the amino acids are given in high doses once or twice a day to increase the plasma concentration and take up by the muscle cells. There is a role of hormonal replacement wherever necessary for example hypogonadism in males and anabolic steroids in elderly females. Long term studies for use of anabolic steroids in geriatric population is still a research consideration. Physical activities mainly resistance exercises are performed to prevent further progression and reversing the effects of frailty. A few pharmacologic agents have also been introduced to treat sarcopenia, like ACE inhibitors, creatine, growth factors and ghrelin to name few which are being used in clinical trials.

### Take home summary points

1. Frailty is diminished ability to carry out daily activities by an elderly.
2. Multiple risk factors have been associated with frailty.
3. The stressor should be detected early and eliminated, if possible, to prevent and reverse the process of frailty to disability.
4. Disability predisposes an elderly at risk of death.
5. Good nutrition, exercises and screening for preventable diseases are the keys to prevent frailty.

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