Physical and Mental Fitness in Hemodialysis Patients: A systematic review

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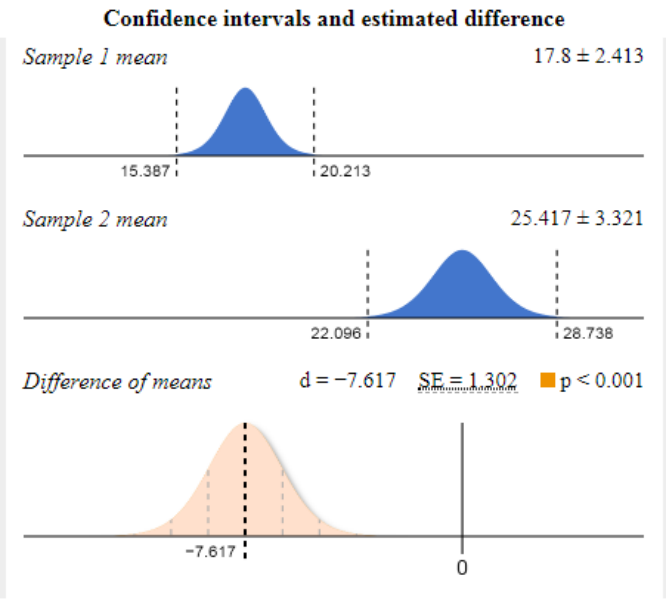
Abstract (300 word limit)

People with End Stage Kidney Disease(ESKD) on Hemodialysis(HD) experience multiple catabolic processes, including loss of albumin and amino acids during dialysis, metabolic derangements, and changes in skeletal muscle associated with conditions of muscle disuse. These changes result in muscle atrophy (loss of lean muscle mass). The presence of neurogenic (muscle atrophy or loss associated with nerve disorder), myogenic (damage intrinsic to the muscle), and mixed (neurogenic and myogenic) changes intrinsic to the skeletal muscle in people with ESKD on HD may further compromise the integrity of the motor-unit complex and contribute to muscle atrophy. The paper is a systematic review of the interventions to improve fitness levels of patients on maintenance HD.

The results of the meta-analysis indicate the following:

1. **The survival of patients on maintenance haemodialysis is increased by improving their physical performance.**
2. **Chronic Dyspnoea is one of the most common symptoms of patients on haemodialysis and is intractable to therapy due to its multifactorial origin.**
3. **Dyspnoea is due to systemic inflammation and is caused by a combination of – anaemia, malnutrition and muscle wasting.**
4. **The 6 minute walk test can be used to classify patients into various fitness levels as an OPD procedure and help patients get an objective evaluation of their fitness.**

Image



Recent Publications (minimum 5)

1. **Sapna Chandgadkar, Dr Ulman S., "The Delay Model of a CMOS Based Biochip", Nanotechnology and Health Care International Conference, Indian Institute of Technology, Mumbai, October 2007. (Selected)**
2. **Sapna Chandgadkar, Dr Ulman S ,"Karyotyping and Biochips in Genetic Engineering", National Conference in Emerging trends in Electronics, P.C.C.E, October 2006.**

1. **H. G. Virani, Adari Rama Bhadra Rao and Anil Kottantharayil "Dual-k spacer device architectures for the improvement of performance of silicon n-channel tunnel FETs," in IEEE Transactions of Electron Devices, vol. 57, No. 10, pg 2410-2417, October 2010.**
2. **Preeti Jagdev and H. G. Virani "Detection of leukemia and its Types using Image Processing and Machine learning" in Proceedings of the International Conference on trends in electronics and Informatics, 11th – 12th May 2017, SCAD College of Engineering, Cheranmahadevi – Tirunelveli – India**
1. **Sampathkumar K, Lobo V, Balasubramaniam J, Mahaldar AR, Yevzlin AS, Kumbar L. Vascular Access Creation and Care—Perspective From India. Advances in Chronic Kidney Disease. 2015;22(6):466–70.**
2. **Mahaldar AR, Restless leg syndrome in chronic kidney disease. *Clinical Queries: Nephrology* 01/2014; DOI: 10.1016/j.cqn.2014.03.002**

Photograph



Biography (150 word limit)

Sapna Chandgadkar is a Masters Student at Goa Engineering College. I am working with Dr H G Virani, HoD Electronics & communication Engineering Department and Dr Amol Mahaldar, HoD, Nephrology, Manipal Hospital. Their research focuses on improving the quality of life of patient on hemodialysis, in emerging markets. The objective is to develop a Markov Model of the interventions that could help patients on Hemodialysis to improve their fitness levels a step at a time.

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Notes/Comments: