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Commentary

A Brief Description on Renal Osteodystrophy

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DESCRIPTION

Renal Osteodystrophy is a bone related disease is now defines as alteration of morpholology in patients who were suffered with Chronic Kidney Disease (CDK). In this Renal Osteodystrophy disease there are many bone abnormalities are occurred. In those mainly two conditions are osteitis fibrosa is characterized by high bone turnover and increased osteoclastic and osteoblastic activities. And another one is Parathyroid Hormone (PTH) with high level of circulation. Some of conditions play major role in renal osteodystrophy they are decrease levels of calcitriol in blood, retention of phosphorus, skeletal resistance to the calcemic action of PTH, decreased levels of serum ionized calcium,reduced numbers of vitamin D receptors and calcium sensors in the parathyroid gland.

The renal osteodystrophy disease is exhibits very less symptoms those are joint pains, bone pains, bone deformation, bone fractures and it is also associated with cardiovascular calcification. The vitamin D made by skin when it is exposed to sunlight is called caolecalciferol or vitamin D_3. Kidney function is to covert this vitamin D_3 into active form of vitamin D called 1,25-dihydroxycholecalciferol or calcitriol, it results in low calcium levels in blood serum also called Hypocalcemia. In this case high level of fibroblast growth factor 23 or FBF23 is required to Chronic Kidney Disease (CKD) patients. FBF23 is a gene protein that is helps in metabolism and regulation of vitamin D and phosphate. A peptide hormone secreted by parathyroid glands is called Prathyroid Hormone (PTH) or parathyrin or parathormone which regulates the calcium serum concentration effect on kidney, bones and intestine.

While the excessive production of parathormone leads to increase in the bone resorption rate and it causes to secondary hyperparathyroidism. When the production of parathyrin is because of factors age, sex, ethnic origin and treatments taken such as calcium salts, vitamin D, steroids and calcimimetics, then it leads to low bone turnover disease called adynamic bone disease. The dialysis treatment is considered for both low and high bone turnover conditions. Overall final results in Chronic Kidney Disease (CKD) patients are skeletal fractures, poor clinical outcomes and reduced quality of life.

The diagnosis process for renal osteodystrophy is begins after the treatment for end-stage kidney disease is started. In the advanced stage of Chronic Kidney Disease-Mineral and Bone Disorder (CKD-MBD) blood results shows that decreased level of calcium and calcitriol and increased in levels of parathyrin and phosphate. The treatment process is including with supplementation of calcium and vitamin D, and to be restricted on dietary phosphate, and taking supplements of phosphate binders like calcium acetate, calcium carbonate, lanthanum carbonate, ferric citrate, sucroferric oxyhydroxide and others. Also taking active vitamin D supplements such as paricalcitol, alfacalcidol, calcitriol, maxacalcitol, doxercalciferol and others. Sometimes bone health is depended on renal transplantation. To remove excess creatinine and urea from blood in the patients of this disease is recommended process is hemodialysis or dialysis is needed to be done for few times in a week for better results. This type of diseases are comes once in our life and remains long lasting until our breath takes away with it, so live a healthy life with proper hygiene.

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