**Study The Relation of Some Biochemical Parameters with a Vitamin D Deficiency in Cardiovascular Disease Patient in Kirkuk City**

***Zainab SHAWKAT1, Şevki ADEM2***

***1****Scince Inistitution, Chemstery Department, Çankırı Karatekin University, Çanıkrı, Turkey*

***2****Scince Inistitution, Chemstery Department, Çankırı Karatekin University, Çanıkrı, Turkey*

|  |
| --- |
| **Abstract**  As in any research work, this work also identified some limitations. One of the limitations was the fact that the groups were not homogeneous in terms of the proportion of men and women. The results were not treated according to gender for all variables because, for most of them, we would be working with a very small sample. If we had more women, we could have treated all the data according to gender and verified whether the variables studied had different behaviours between men and women. This would have been interesting since in some variables, namely 25(OH)D3, there seems to be an influence of gender. Another possible limitation was the fact that the patient group consisted of individuals who were diagnosed with coronary artery disease, who underwent catheterization approximately 2 or 3 years before recruitment. Possibly, if the recruitment had been carried out a few weeks or months after the cardiovascular event, the results would have been different. The differences between controls and patients could have been even greater. However, this is what has been done in most studies published to date. Perhaps this is a gap and studies should be developed in patients monitored over several years to, in a way, assess the role of vitamin D in the evolution and prognosis of these individuals. In the patient group, there were only 16 individuals with vitamin D sufficiency. If the sample had been larger, it is possible that we would have had a greater number of individuals with vitamin D sufficiency in this group and it would have been possible to make comparisons with a greater degree of reliability. |
| ***Keywords: Vitamin D deficiency, cardiovascular disease, biochemical parameters.*** |

**References**

1. Alves, M., Bastos, M., Leitão, F., Marques, G., Ribeiro, G., & Carrilho, F. 2013. Vitamina D–importância da avaliação laboratorial. Revista Portuguesa de Endocrinologia, Diabetes e Metabolismo, 8(1): 32-39.
2. Bartoszewicz, Z., Kondracka, A., Jaźwiec, R., Popow, M., Dadlez, M., & Bednarczuk, T. 2013. Can we accurately measure the concentration of clinically relevant vitamin D metabolites in the circulation? The problems and their consequences. Endokrynologia Polska, 64(3) 238-245.
3. Chan, D. C., & Watts, G. F. 2006. Apolipoproteins as markers and managers of coronary risk. Journal of the Association of Physicians, 99(5): 277-287.
4. Holick, M. F., Binkley, N. C., Bischoff-Ferrari, H. A., Gordon, C. M., Hanley, D. A., Heaney, R. P., & Weaver, C. M. 2011. Evaluation, treatment, and prevention of vitamin D deficiency: an Endocrine Society clinical practice guideline. The Journal of clinical endocrinology & metabolism, 96(7): 1911-1930.
5. Jorde, R., & Grimnes, G. 2011. Vitamin D and metabolic health with special reference to the effect of vitamin D on serum lipids. Progress in lipid research, 50(4): 303-312.
6. Ke, L., Graubard, B. I., Albanes, D., Fraser, D. R., Weinstein, S. J., Virtamo, J., & Brock, K. E. 2013. Hypertension, pulse, and other cardiovascular risk factors and vitamin D status in Finnish men. American journal of hypertension, 26(8): 951-956.
7. Norman, A. W., Frankel, B. J., Heldt, A. M., & Grodsky, G. M. 1980. Vitamin D deficiency inhibits pancreatic secretion of insulin. Science, 209(4458): 823-825.