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Evaluation of nephrotoxicity induced by chemotherapy with salts platinum between Cockcroft-Gault method and MDRD method

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The platinum salts are one of the most chemotherapy drugs used in cancer (particularly in the lung, bladder, testis, ovary, cervix, endometrial, colon and rectum), however they have a potential renal toxicity requiring an evaluation of tolerance kidney patients before and after treatment cures. This study compares the different methods of assessing renal function used for patients receiving chemotherapy with cisplatin or carboplatin (between the measurement of plasma urea, and the calculation of creatinine clearance as well as changes in the methods of estimating creatinine clearance with the Cockcroft-Gault method and the MDRD method Modification of Diet in Renal Disease). The study was performed on 25 male patients aged 42-74 years admitted to the Oncology Department of the University Hospital Oran for treatment of various cancers, mainly lung cancer. After the spectrophotometric determination of plasma creatinine and urea, the creatinine clearance was calculated by the methods of Cockcroft-Gault and MDRD, the distribution of the urea after the platinum salt of cure is essentially inside the reference interval with an average of (0.38 and 0.36 g/l) after the first treatment and cure 2nd respectively, while the clearance of creatinine is below the range with an average of (69.28 and 72.25 ml/min) after the 1st and 2nd cure respectively, we see that for older patients over age 65 underestimation clearance calculated by Cockcroft-Gault, however it is overestimated by the same method in patients weighing more than 70 kg. Indeed, the evaluation of nephrotoxicity cannot be done on a simple determination of urea or plasma creatinine, but it requires the calculation of creatinine clearance by Cockcroft-Gault or MDRD methods depending on the age and patient weight.

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Effect of anti-diabetic drugs and adipokine levels

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T2DM is a consequence of complex interactions among multiple genetic variants and environmental risk factors. This complex disorder is also characterized by changes in various adipokine. In this study, our objective was to estimate the levels of adiponectin, leptin and resistin (ALR) in Type 2 Diabetes Mellitus (T2DM) patients, besides studying the effect of various drugs on their levels. Study participants included 400 diabetic and 300 normal patients from the Department of Endocrinology and Department of Biochemistry, Government Medical College Srinagar. Subjects were categorized under various groups i.e., (group one: metformin treated), (group two: Glimepiride treated) and cases were also categorized as obese with T2DM (group A), obese without T2DM (group B) and T2DM only (group C). The serum ALR levels were estimated by ELISA (Alere), and also biochemical parameters were evaluated before and after treatment. Adiponectin levels were found to be significantly lower in T2DM cases as compared to controls (12±5.5 vs. 22.5±7.9 μg/ml), while as leptin and resistin levels were found to be significantly higher than controls (14.3±7.4 vs. 7.36±3.73ng/ml) (13.4±1.56 vs. 7.236±2.129 pg/ml). Taking the effect of drugs into consideration, the effect on adiponectin and resistin levels were found to be highly significant in group two before and after treatment (11±5 vs. 19.2±4.5 μg/ml) (13.6±2.5 vs. 7.3±2.9 pg/ml), while as more effect was observed in leptin among group one (metformin) treated cases (27±15 ng/ml vs. 15±15 ng/ml). Further the adiponectin levels were found to be significantly lower in group B, while as leptin and resistin levels were found to be significantly higher among obese cases when compared to T2DM cases only. Glimepiride also shows more effect on FBG, HbA1c% levels while as metformin shows more effect on lipid profile levels. From the study, it can be concluded that ALR levels are affected by use of anti-diabetic drugs among which glimepiride shows more effect on adiponectin and resistin levels while leptin gets affected more by metformin. It can also be proposed that ALR levels are not affected by diabetes only, suggesting that their alterations in T2DM may be due to obesity as we observed more ALR changes in obese cases when compared to T2DM cases and so there might be an important link between adiposity and Insulin resistance.

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