biphosphonates for the treatment and prevention of cancer-related skeletal events (mainly intravenously), rather than in those patients receiving biphosphonates (mainly orally) for nonmalignancy indications. We would like to draw the readers’ attention to a nuclear medicine approach that can be useful to evaluate jaw pain and differentiate ONJ from neoplastic conditions affecting the jaw in patients known to have cancer. Histology is in some cases mandatory to differentiate ONJ from neoplastic osteolysis, but a biopsy can further contribute to bone damage. Hence the noninvasive imaging approach is worth describing.

Nuclear medicine functional imaging obtained by a tracer that shows oncotropic properties, such as Tc99m-sestamibi, in comparison to a nontumor-specific tracer such as fluorodeoxyglucose (FDG), can support the differential diagnosis, thus avoiding invasive procedures in diagnosis of ONJ.

FDG is an exquisitely sensitive agent for tumor imaging with high negative predictive value; however, it is also known to be nonspecific and can sometimes show uptake in nonmalignant, infective/inflammatory pathology. While Tc99m-sestamibi is considered to be a tumor-specific agent. The dual tracer approach is based on the criteria that malignant pathology causing jaw pain will be FDG as well as Tc99m-sestamibi avid. Alternatively, nonmalignant causes like ONJ, will be FDG avid but will be cold on Tc99m-sestamibi scan.

This criteria has been primarily studied in differentiating ONJ from myeloma involving mandible. Dual tracer imaging is an interesting approach to diagnose/exclude diagnosis of ONJ avoiding the risks of a surgical biopsy.

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REFERENCES

1. Rastogi A, Rattan V, Bhadada SK. Osteonecrosis of jaw associated with bisphosphonate use. Indian J Endocrinol Metab 2012;16:450-2.
2. Catalano L, Del Vecchio S, Petruzziello F, Fonti R, Salvatore B, Martorelli C, et al. Sestamibi and FDG-PET scans to support diagnosis of jaw osteonecrosis. Ann Hematol 2007;86:415-23.
Cardiovascular diseases risk evaluation in newly diagnosed type-2 diabetics: An association of novel biomarkers apo-proteins and C-peptide

Sir,

Cardiovascular diseases (CVD) such as coronary heart disease (CHD) and stroke are the largest causes of death in developing countries and are one of the main contributors to the disease burden.[1,2] With an ever increasing incidence of both, type-2 diabetes mellitus (DM) and CVD in most urban populations, there has been a demand for newer techniques that could help in the early detection of the risk of this disease complex. Premature cardiovascular morbidity and mortality is reportedly high in diabetic subjects.[3] Control of the cardiovascular diseases will require modification of risk factors that have two characteristics:

1. The risk factor must have high attributable risk or high prevalence or both
2. Most or all of the risks must be cost-effectively reversible[4]

The primary cause of CVD is the atherosclerosis observed either due to genetic predisposition or secondary to a disease like diabetes mellitus; > 80% of deaths in diabetic subjects are due to CVDs (two-third of which are due to coronary artery disease (CAD).[5] Various studies have reported the development of atherosclerosis-related complications in type-2 DM due to hyperinsulinemia, insulin resistance, and raised C-peptide levels.[6,7] The basal C-peptide level is reportedly a surrogate marker of subclinical atherosclerosis in type-2 diabetic patients, owing to a positive correlation between basal C-peptide and intima-media thickness (IMT).

Type-2 DM has an increased conversion of low-density lipoprotein (LDL) to smaller, more atherogenic lipoproteins, termed as ‘small dense LDL’. This pattern has been reported in insulin-resistant pre-diabetics as well.[8] A deranged lipid profile is one of the major risk factors for CVDs, which the physicians have been focusing on. The newly diagnosed diabetic patients may or may not present with a severely deranged lipid profile. However, such patients too are at a high risk of CVDs. Different markers have been used for evaluating the risk of CVD in different studies. However, there is still no gold standard biochemical marker for evaluating the risk, and the search is still on for a marker that will help in an early detection of CVD risk.

In newly diagnosed type-2 diabetics, serum apo-proteins, especially cardio protective apo-A1 and apo-B (of LDL and Very-low-density lipoprotein (VLDL) can prove to be of great significance in assessing the CVD risk, as there is a strong association of C-peptide with the CVD risk ratio, apo-B / apo-A1, and also with apo-B. Diabetic dyslipidemia, complexed with raised atherogenic apo-protein, apo-B, and reduced levels of cardio protective high density lipoprotein cholesterol (HDLc) and its apo-protein, apo-A1 increases the risk of atherogenic complications of DM. Similarly, an association of blood pressure and C-peptide further contributes to CVD risk evaluation and reduction, as hypertension is a controllable disease.

Thus, type-2 diabetic patients, at the time of diagnosis, should be evaluated for serum C-peptide levels, as it would hint at the possibility of CVD, owing to a strong association with both traditional risk factors (serum lipid profile and hypertension) and novel markers like apo-proteins.

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REFERENCES

1. World Health Organization. Preventing chronic diseases: