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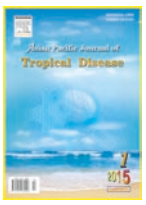

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Implications of ischemia modified albumin levels in hypertension

Varikasuvu Seshadri Reddy[1*], Pullaiah Pasupuleti[2], Balananda Perugu[3]

[1]*Department of Biochemistry, BPS Govt. Medical College, Haryana, India*

[2]*Department of Biochemistry, Sri Muthukumaran Medical College, Tamil Nadu, India*

[3]*Department of Physiology, Gitam University Institute of Medical Sciences and Research, Andhra Pradesh, India*

Dear editor

Recent research article of "Prognostic implications of ischemia modified albumin in known cases of 86 elderly hypertensive South Asian aged 56-64 years: a hospital based study[1]" has resulted in a great deal of interest among us in addressing the following points. We deeply appreciate this pilot research on the value of ischemia modified albumin (IMA) among hypertensives and normotensives. A quick search of Medline produced two related but conflicting reports[2,3]. In one report, Sbarouni *et al.* found no difference in IMA level between hypertensives and normal controls[2]. Whereas, in other recent study, it was reported significantly higher level of IMA in hypertensive patients in comparison to controls[3]. Although this finding is in line with the reported research, it was surprisingly not cited in their paper[1].

This study involves the estimation of IMA by a previously described albumin cobalt binding assay measuring the colour developed by unbound cobalt using dithiothreitol. As it is well known that IMA value depend on albumin level. It is important to report both albumin value and IMA result corrected for albumin[4]. This appears to be of great importance in view of recent study reporting an association between the cardio protective serum albumin and blood pressure, a cardiovascular risk factor[5].

Furthermore, despite showing significant increase in the levels of cholesterol, triglycerides, low density lipoproteins and decreased high density lipoproteins in hypertension group, there is no information on free fatty acid (FFA) level that would have been addressed. It is well known knowledge that the FFAs and bilirubin in circulation are predominantly bound to serum albumin[6,7]. This could as a consequence able to interfere with albumin cobalt binding assay affecting IMA values[8].

Delving into the literature revealed important information that FFAs allosterically inhibit cobalt binding to albumin, diminish the overall cobalt binding to heterogeneous system architecture[8-10]. Interestingly, elevated FFAs have been reported as an independent risk factor for hypertension[11] and were

*Corresponding author: Varikasuvu Seshadri Reddy, Department of Biochemistry, BPS Govt. Medical College, Khanpur Kalan, Sonepat, Haryana-131305, India.
Tel: +918059123799, +919490989696
E-mail: lifeschemistry@live.com

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reported to modulate microvascular function[12]. FFAs impair endothelium dependent vasodilation[13], independent correlates of blood pressure[14] contributing to hypertension and increased cardiovascular risk. In addition to their elevation in hypertension, increased FFAs concentration also induces oxidative stress[15]. Interestingly, it was reported that the serum bilirubin level was significantly lower in the untreated hypertensives when compared with normotensives or the treated hypertensives[16]. Therefore, we speculate that this sounds like a necessary to study the level of FFAs, bilirubin and their effect in relation to IMA, an ischemic and oxidative stress marker as well.

Although the authors had been concluded that IMA could be incorporated as a diagnostic test parameter in hypertension patients[1], there is no information on the receiver operating curve analysis for IMA between hypertensive patients and normotensives controls. Such statements stand applicable or would be more meaningful with the data on diagnostic cutoff values for IMA in hypertensive subjects.

Despite the aforementioned information, it is of much importance that this study demonstrated valuable information on IMA levels in hypertension in comparison to normotensive controls. We hope the points highlighted by us in this commentary letter would be carried forward through further research. Future extension of this research on these aspects would be highly appreciated and may yield useful scientific information, possibly.

Conflict of interest statement

We declare that we have no conflict of interest.

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