Editorial

Can lipid profiles predict clinical outcomes in hemodialysis patients with ischemic heart disease?

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Needless to say, drug-eluting stents (DESs) significantly reduce the risk of restenosis after percutaneous coronary intervention (PCI). However, effects of DES implantation have been limited in patients on maintenance hemodialysis (HD) [1,2].

Basically, patients with renal impairment, particularly end-stage renal disease, frequently have systemic atherosclerosis [3]. One possibility is that higher rates of prevalence of traditional risk factors, such as advanced age, diabetes, and hypertension in the HD population may affect such high cardiovascular events [3].

In this issue of the Journal of Cardiology, Nagata et al. [4] report that low-density lipoprotein (LDL) cholesterol levels could not predict major adverse cardiac events in HD patients undergoing PCI. It is well known that lipid profiles greatly affect clinical outcome in non-HD populations [5]. Moreover, many studies have shown beneficial effects of statins on the improvement of clinical outcome data in non-HD patients undergoing coronary revascularization. However, in HD patients, there are limited studies to show the beneficial effects of statins on the improvement of the clinical outcome. For instance, 4D (Die Deutsche Diabetes Dialyse) study did not prove that statins do not affect clinical outcome in HD patients [6]. Therefore, whether statins use has a beneficial effect on clinical outcomes in the HD population has been controversial and the debate is ongoing regarding the ideal LDL cholesterol level. From these points, the findings of the article by Nagata et al. [4] are concurring with the previous reports.

A recent post hoc analysis of the 4D study revealed that treatment with atorvastatin significantly reduces cardiac events in HD patients with type 2 diabetes, if they have pretreatment LDL levels >145 mg/dl [7]. Because of the limited number of enrolled patients in the study by Nagata et al. [4], further studies should be warranted. Also, the importance of HDL levels should also be investigated.

Protein-energy wasting (PEW), commonly observed in patients with end-stage renal disease, is associated with increasing risk of cardiovascular morbidity and mortality [8]. The PEW is also considered to be due to inflammatory processes rather than inadequate nutritional intake. These associations are malnutrition, inflammation, and atherosclerosis syndrome [9]. Inflammatory processes are related to atherosclerosis progression, resulting in worse clinical outcomes in HD population [10]. From this point of view, a simple method to clarify the risk stratification for cardiovascular mortality is attractive. Recently, the geriatric nutritional risk index (GNRI) has been reported as a new screening tool for PEW [11]. In assessing GNRI, serum albumin levels and body mass index are important factors [12]. Nagata et al. [4] also suggested that body mass index independently predicted the incidence of major adverse cardiac events.

Epicardial coronary artery stenosis has a clinical impact on HD patients. In addition, coronary microcirculatory impairment has been an important issue in HD patients [13]. In such situations, specific medical treatment such as nicorandil may have beneficial effects on improving coronary microcirculatory flow, resulting in better clinical prognosis in the HD population [14].

As described above, the manifestation and etiology of cardiovascular disease between non-HD and HD subjects are quite different. Also, unfortunately, evidence-based medical therapies to improve clinical outcomes in HD patients have been limited. Taken together, we should provide optimal strategies for cardiovascular prevention, diagnosis, and decision-making in patients on HD to improve their clinical outcomes. However, before that, we have to know the characteristics precisely.

References


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