MASKED HYPERTENSION IS HIGHLY PREVALENT AND PERSISTENT OVER-TIME IN RENAL TRANSPLANT PATIENTS

Vincenzo Panuccio, Rocco Tripepi, Giovanna Parlongo, Serena Quattrone, Giovanni Tripepi, Carmine Zoccali, Francesca Mallamaci

UO di Nefrologia Dialisi e Trapianto Renale Azienda Ospedaliera di Reggio Calabria & CNR-IFC/IBIM Reggio Calabria. ITALY

OBJECTIVES

Hypertension is a major risk factor for cardiovascular complications and graft loss in renal transplant patients. The diagnosis and treatment of hypertension in these patients is considered as a priority by current KDIGO renal transplantation guidelines but these guidelines make no formal recommendation for the application of 24h ambulatory blood pressure (ABPM).

METHODS

We systematically applied ABPM in the follow up in a series of 233 renal transplant patients (67% male; mean age 46±12 years; 16% diabetics; eGFR 56, IR 41-69 mil/min). These patients represented the 90% of the whole population at the transplant center of our institution. Follow up at this center is performed according to recommendations by the American Society of Transplantation (J Am Soc Nephrol 11: S1–S86, 2000). In a subgroup of 145 patients we repeated ABPM after a median interval of 31 months. Ninety % of patients were being treated with antihypertensive agents. Confirmed hypertension and normotension, masked hypertension and white coat hypertension were defined according to ESH 2013 guidelines (J Hypertension 2013, 31:1281–1357).

RESULTS

39 patients (17%) were hypertensive both by conventional BP measurements and by ABPM criteria and 118 patients (51%) were normotensive by the same criteria. Sixty-eight patients (29%) had masked hypertension (MHY) and 8 (3%) white coat hypertension (WCH). The prevalence of masked hypertension in renal transplant patients (29.2%) was about three times higher than that reported in population based studies (13%, J Hypertens 2007; 25:2193–2198.) and in a metanalysis of studies in CKD patients (8% CJASN 4:656–664, 2009) (Fig.1). Conversely, the prevalence of WCH in transplant patients (3%) was substantially less than that in the general population (13%) and in CKD patients (18%) (Fig.2). On follow-up, the prevalence of MHY remained very high and close to the first estimate (26%) while the prevalence of WCHT increased to 12.4%. Analysis of individual cases showed fluctuating patterns in about 1/3 of the population. Indeed 22% of patients who were initially normotensive or WCHY developed MHY.

FIGURES

Fig.1

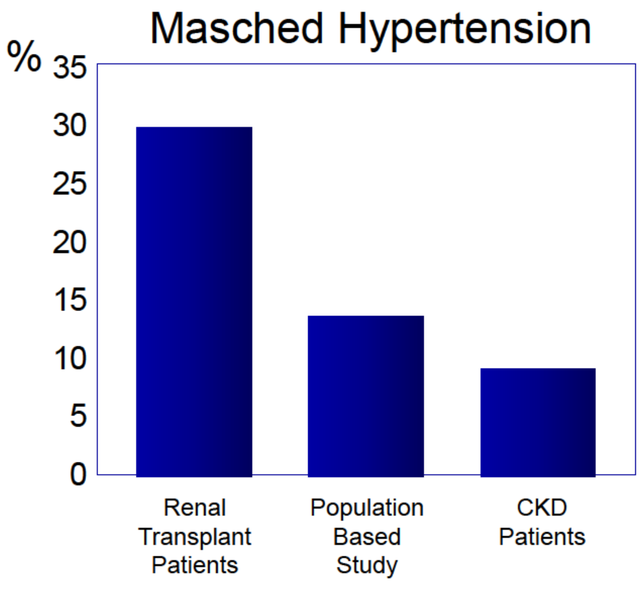
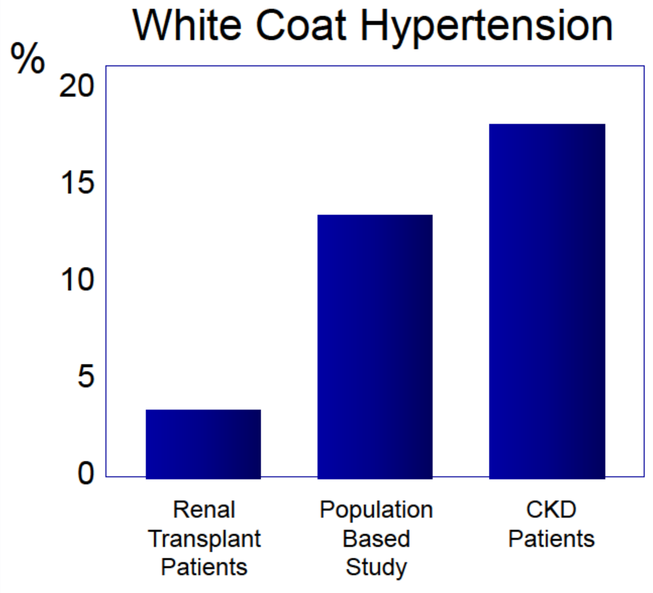


Fig.2



CONCLUSIONS

Less than a half of renal transplant patients achieve full normotension. Even though the prevalence of transplant patients with hypertension by conventional BP and confirmation by ABPM is similar to that in the age and sex matched general population, the frequency of masked hypertension in these patients is alarmingly high (29%) and, even though hypertension patterns fluctuate over time, the overall prevalence of MHY remains constant. Because masked hypertension entails a high risk of cardiovascular events, if confirmed in other surveys, our findings are a strong call for the systematic application of ABPM for the diagnosis and the monitoring of hypertension in renal transplant patients.

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