

Preface

The existence of a strong relationship between arterial hypertension and hemorheological alterations, present in all vascular segments, can be affirmed.

In order to improve the clinical and therapeutic approach to the treatment of arterial hypertension, all researches in this field have been centered on blood flow in the vessels, on hemorheology microcirculation and peripheral tissue oxygenation.

During essential hypertension it is possible to observe changes in endothelial functions and in microvascular perfusion associated with a decrease in tissue oxygenation, partially due to the hemorheological changes (such as an increase in blood viscosity or red blood cell aggregates often present in microcirculation) which can favour an increase in peripheral resistance and can induce or impair arterial hypertension.

The arterial hypertension, as known, could be considered as a progressive ischaemic syndrome interesting the macro- and microcirculation. During arterial hypertension the hemorheological alteration presents an increase in whole blood and plasma viscosity, a decrease in RBC deformability and an increase in RBC aggregability.

The association between blood viscosity and blood pressure is very interesting (Fowkes 1993).

Anyway, some aspects still remain unclear:

1. Can arterial hypertension (with its vascular and cardiac remodeling) be the most relevant factor inducing alterations in the macro- and the microrheology?
2. Can the altered hemorheology, above all in the microcircle, be one of the numerous causes of hypertension?
3. What is the influence of tissue oxygenation changes in these situations: are these changes or effects of alterations during hypertension?

With the valuable collaboration of Max R. Hardeman, Ph.D. and Adrianus J. van der Kleij, MD, Ph.D., from Academic Medical Center, University of Amsterdam, The Netherlands, of the Colleagues of my "Equipe" and, especially, of Dr Giuseppe Cicco, who has worked for since ten years in my Institute in these fields of Research, we organized this 2nd International Conference in Bari, Italy on 29–31 October 1998 to discuss and collect the main experiences in these fields.

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