

Time Trend Analysis of Hypertension Prevalence, Awareness, Treatment and Control in Italy: Novel Insights from Recent National Surveys in the General Population

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Essential hypertension is the most common risk factor in the general population and it has been related to a markedly higher risk of having major cardiovascular events, including myocardial infarction, stroke, congestive heart failure and cardiovascular death, in the following 10 years compared to normotension [1]. On the other hand, it has been demonstrated that lowering high blood pressure (BP) levels to less than 140/90 mmHg is paralleled by a substantial reduction of cardiovascular risk, improved cardiovascular prognosis and event-free survival [2]. Hypertension, in fact, is deeply involved in the pathogenesis of atherosclerotic diseases, promoting development and progression asymptomatic structural and functional remodelling of heart and vessels towards acute cardiovascular events or death [3]. For these reasons, and in view of the large prevalence of high BP in the general population [4], preventive strategies aimed at controlling non-communicable diseases, particularly hypertension, represent a fundamental aspect of health care policies at both national and world levels. Indeed, the World Health Organization (WHO) recommended a 25% relative reduction of the prevalence of hypertension among the public health targets to be achieved within 2020 in order to reduce the global burden of diseases [5].

Systematic and periodic assessments of hypertension prevalence, awareness, treatment and control are available

in various countries around the world [6–9]. These reports have been used not only for epidemiological purposes, but mostly for planning educational and therapeutic interventions aimed at ameliorating the BP control rates and reducing the incidence of hypertension-related cardiovascular diseases at various levels or settings. Over the last few years, such analyses were made available also in Italy, thus confirming a high prevalence of hypertension in the general adult population, with relatively low rates of awareness and control [10–14]. Among these surveys, the analysis provided by the National Institute of Health represents the first and most inclusive assessment of hypertension prevalence and control in the general population in our Country [13, 14].

In this issue of high blood pressure and cardiovascular prevention, Di Lonardo and colleagues [15] reported an updated analysis of this large database, which included data from three large epidemiological surveys: the risk factors and life expectancy (RIFLE) study [16], the Osservatorio Epidemiologico Cardiovascolare (OEC) [17] and the Osservatorio Epidemiologico Cardiovascolare/Health Examination Surveys (OEC/HES) [18]. What is relevant from this analysis is the very long observational period, which covered three main intervals (which covered 1978–1987, 1998–2002 and 2008–2012 periods, respectively), as well as the large population sample (which included about 70,000, 9712 and 9111 adult individuals, respectively). Although participants included in these surveys may not represent the whole Italian population, as properly acknowledged by the authors, the main findings of this analysis offered some interesting aspects to be discussed on hypertension status in the general adult population in Italy.

As shown in Fig. 1, hypertension prevalence had a substantial decrease, whereas awareness and control

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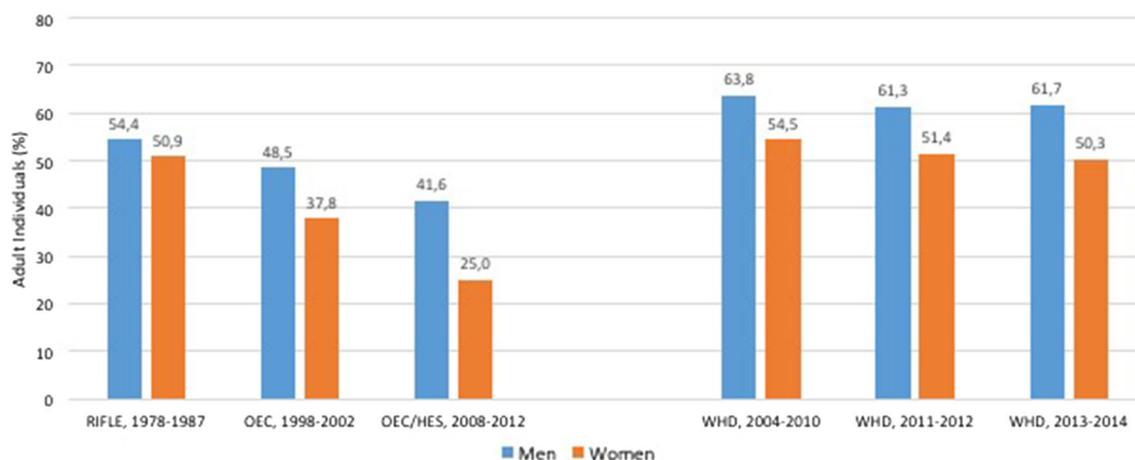


Fig. 1 Prevalence of hypertension according to gender groups in the following population surveys: risk factors and life expectancy (RIFLE) study [16]; Osservatorio Epidemiologico Cardiovascolare (OEC) [17]; the Osservatorio Epidemiologico Cardiovascolare/Health

Examination Surveys (OEC/HES) [18]; World Hypertension Day (WHD) 2004–2014 [10]. Hypertension was defined as systolic equal or greater than 140 mmHg or diastolic blood pressure equal or greater than 90 mmHg

showed a slight, but progressive increase over the three subsequent surveys in both gender groups. These findings were consistent with those from a recent population survey, which collected data from the World Hypertension Day in Italy over a relatively long observational period [10]. In this analysis hypertension prevalence decreased from about 64% to about 61% in males and from about 54% to about 50% in females [10], thus suggesting that prevention of the disease in large proportions of individuals from the general population can be achieved, although is still far from being obtained.

Another relevant aspect of the analysis is the fact BP levels were higher in male than in female individuals and that systolic BP levels were, on average, in the high-normal range (between 130 and 139 mmHg), whereas diastolic BP levels were more frequently in the normal range (80–85 mmHg), independently by regions. This distribution was also consistent with another analysis performed in adult outpatients followed by general practitioners and distributed across the whole national territory [11], and indirectly confirmed that systolic BP levels are more difficult to control than diastolic BP levels.

Although with some discrepancies and with the well-known limitations of the observational retrospective approach, the results of these surveys demonstrated that hypertension prevalence is reduced, but persistently elevated in the general adult population. This has obvious relevant consequences from both clinical and socio-economic point of views, since unaware asymptomatic individuals with high BP as well as treated uncontrolled hypertensive patients are at high risk of developing major cardiovascular consequences and hospitalizations due to cardiovascular diseases. For these reasons, periodic and

thorough assessment of BP levels in the general population or in specific subgroups of high risk patients (e.g. elderly, hypertensive patients with metabolic abnormalities, diabetes, coronary artery disease or previous stroke) should be promoted at both national and regional levels, since they provide useful information that can be used for planning interventions aimed at improving hypertension management and control in Italy.

Compliance with Ethical Standards

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Conflict of interest Authors have no conflict of interest to disclose with the contents of the present manuscript.

Ethical approval This article does not contain any studies with human participants.

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