ASSESSMENT OF THE PREVALENCE OF CHRONIC COMORBIDITIES IN MS PATIENTS IN TUSCANY: A STUDY FROM ADMINISTRATIVE DATA

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INTRODUCTION: Comorbidities are common in MS patients, and can worse the prognosis and the quality of life [1].
In fact there are several diseases which could affect disability, mortality and health care utilization. The prevalence of these conditions varies widely depending on comorbidities considered, the specific patient population evaluated, and other factors such as geographic region. There are few published studies in Italy despite the relevance of considering additional disorders both for clinical decision making and public health planning. Our aim is to evaluate the prevalence of some comorbidities in MS patients in Tuscany using case-finding algorithms based on administrative data. We selected some common chronic diseases, routinely monitored by the Regional Health Agency of Tuscany to evaluate the public health, such as diabetes, chronic obstructive pulmonary disease (COPD), hypertension, stroke, heart failure (HF), cardiac infarction and ischemic heart disease (IHD).

METHODS: In a previous study, we created and validated a case-finding algorithm, based on administrative data, to evaluate and routinely monitor MS prevalence and incidence in Tuscany [2; 3]. Other similar algorithms have been created and are commonly used by the Health Agency to monitor other chronic diseases. The algorithms are based on the following administrative data: hospital discharge records, drug-dispensing records, disease-specific exemptions from copayment to health care and home and residential long-term care. We included all patients aged >16 years. So we linked the patients cohorts to find comorbidities.

RESULTS: As at December 31, 2017, we identified 7,796 cases with a crude MS prevalence of 208.3 per 100,000. Among prevalent cases, we found 5105 (65.5%) patients with no comorbidities among the ones selected, 2170 cases with hypertension, 555 with diabetes, 496 with COPD, 240 with IHD, 161 with stroke, 110 with HF and 104 with cardiac infarction. Some patients had more than one comorbidity (see Graph 1). Then, we compared standardized prevalence rates of these chronic diseases among MS patients with the ones in the Tuscan population. The most common comorbidity was hypertension with a prevalence of 240.5 per 1000 among MS patients vs 219.6 in the general population, followed by diabetes with a rate of 62.8 vs 55.2, COPD (59.1 vs 54.1), IHD (25.5 vs 27.6), stroke (17.6 vs 8.1), HF (11.3 vs 11.1) and cardiac infarction (11 vs 11.6) (Tab. 1). This increased risk was particular evident when we observed the 20-64 years group (Tab. 2).

DISCUSSION: The prevalence rates of comorbidities were very similar to the published data, with hypertension being the most frequent comorbidity followed by diabetes [4; 1]. We found higher comorbidities prevalence rates in MS patients in comparison with general population and, as observed in other published studies, the influence of MS on the risk of comorbidities was especially important in younger patients and in women. [5; 6; 7]. A possible reason for the increased risk of CV diseases is the higher frequency of adverse health behaviors in people with MS, such as smoking and low levels of physical activity than the general population [8].

CONCLUSIONS: We confirmed that administrative data could be used to evaluate comorbidities [9; 10]. This study emphasizes the importance to enhance medical surveillance of patients with MS to identify those at risk of certain comorbidities and to promote protective lifestyles to prevent and/or reduce the impact of chronic diseases, which could reduce quality of life and increase the risk of premature death.
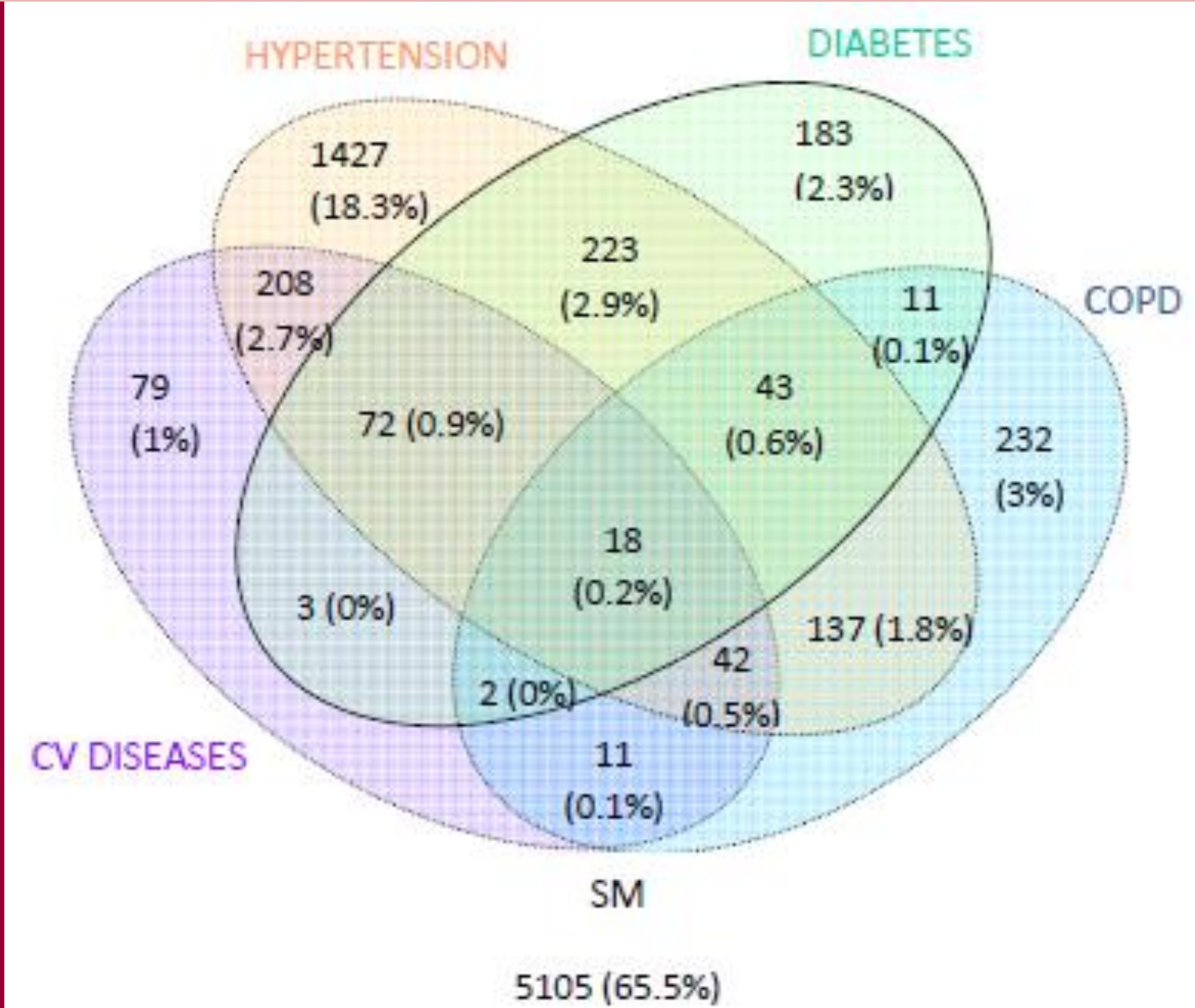
Graph 1. Venn diagram of comorbidities and MS. CV diseases include IHD, stroke, HF and cardiac infarction.

Tab.1 Standardized prevalence rates of chronic diseases among people >16 years (per 1,000)

	MS population			General population		
	M	F	Tot	M	F	Tot
Diabetes	70.4	59.6	62.8	60.1	51.1	55.2
COPD	61.4	58.6	59.1	57.1	51.5	54.1
Stroke	20.9	16.7	17.6	10.1	6.4	8.1
IHD	43.5	18	25.5	40.4	16.3	27.6
HF	15.6	9.6	11.3	14.8	7.8	11.1
Hypertension	260.9	231.8	240.5	231.2	208.7	219.6
Infarction	21.9	6.4	11	19	5.1	11.6

Tab.2 Standardized prevalence rates of chronic diseases among people between 20-64 years (per 1,000)

	MS population			General population		
	M	F	Tot	M	F	Tot
Diabetes	54.4	46.2	48.7	41.5	37.7	39.5
COPD	45.9	52.4	50.3	42.9	42.7	42.8
Stroke	13.3	12.1	12.4	5.5	3.6	4.5
IHD	27.9	11.4	16.4	22.3	6.9	14.4
HF	9.1	5.2	6.4	7.3	2.8	5
Hypertension	206.9	184.9	191.7	173.9	150.2	161.7
Infarction	15.5	3.9	7.4	12.1	2.5	7.1

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