



LETTER TO THE EDITOR

COVID-19 forced restrictions did not affect metabolic control in youth with T2D in Italy

The impact of the COVID-19 pandemic was early and severe in Italy. Movement restrictions and social distancing imposed by government measures due to the COVID-19 pandemic have resulted in increased body mass index (BMI) in obese patients worldwide [1,2]. Recent reports have suggested an increasing incidence in childhood type 2 diabetes (T2D) during the COVID-19 pandemic [3]. Few data on glycemic control was reported in children and adolescents with T2D during the forced lockdown [4,5]. On the other hand, improved metabolic control has been reported in Italian children with T1D after the COVID-19 lockdown [6,7]. We aimed to investigate whether there had been any changes in clinical and metabolic data in youth with T2D following COVID-19 government restriction measures in Italy. A retrospective multicenter study involved 14 Italian pediatric centres. All children with T2D followed by the centres were recruited for this study, 60% were of Italian origin, 34% African and 16% from Eastern Europe. Diagnosis of T2D was confirmed with the absence of beta-cell auto-antibodies and the exclusion of monogenic diabetes. Clinical and laboratory data collected in the 6 months prior to the restrictions and 6 months after the suspension of the restrictions were available for all youth under 20 years of age. Body weight, height, blood pressure,

waist circumference, HbA1c, total and HDL cholesterol, and triglycerides were assessed in both visits. Hemoglobin A1c was measured with DCA Vantage Analyzer (Siemens). Changes between before and after restriction were analyzed using the Wilcoxon Signed-Rank test. Data on 61 adolescents (24 males) were analyzed. At the visit before the restrictions, the mean age and duration of diabetes were 14.6 (2.4) years and 2.5 (1.5) years, respectively. The mean time between the two visits was 10.2 (5.3) months. Therapeutic strategies were distributed as follows: 31 with metformin, 8 with insulin, 4 with diet alone, 18 with metformin plus insulin. No changes were reported between the two visits for clinical and biological variables (Table 1). Furthermore, no gender differences were found for all variables studied nor differences between ethnic groups. The main limitations of this study were the retrospective design and the different evaluation time between the visit before and after the forced lockdown. The prevalence of young people with T2D in Italy is still limited and the small number did not allow to make comparative assessments on the different ethnic group of the participants. However, the recruitment of young people with T2D was 100% of the patients followed by the centres that participated in the study.

Table 1 Clinical and biochemical outcomes of youth with type 2 diabetes before and after government restriction measures to limit COVID-19 epidemic in Italy.

	All			Non-insulin treated			Insulin treated		
	Before Restrictions	After Restrictions	<i>p</i>	Before Restrictions	After Restrictions	<i>p</i>	Before Restrictions	After Restrictions	<i>p</i>
N	61	61		37	37		24	24	
HbA1c, %	7.0 (1.8)	7.3 (2.1)	NS	5.9 (0.8)	6.4 (1.9)	NS	8.35 (1.9)	8.2 (1.7)	NS
BMI SDS	2.4 (0.8)	2.1 (0.9)	NS	2.1 (1.1)	1.9 (1.1)	NS	2.4 (0.8)	2.1 (0.9)	NS
Waist/Height ratio	0.58 (0.09)	0.56 (0.16)	NS	0.6 (0.09)	0.58 (0.1)	NS	0.55 (0.08)	0.52 (0.1)	NS
Total Cholesterol, mg/dl	170 (35)	176 (35)	NS	161.3 (33.7)	172 (27.1)	NS	183 (33.6)	181.9 (34.9)	NS
HDL Cholesterol, mg/dl	45.3 (9)	44.3 (12)	NS	46.9 (11.1)	45.2 (11.9)	NS	42.7 (10.8)	42.9 (12)	NS
Triglycerides, mg/dl	128 (198)	141 (73)	NS	86.8 (35.4)	114.5 (52.5)	NS	133.8 (70.5)	175.7 (93.1)	NS
Systolic BP, mmHg	120 (58)	123 (54)	NS	120 (62)	121 (60)	NS	119 (58)	122 (61)	NS
Diastolic BP, mmHg	76 (57)	72 (54)	NS	75 (54)	73 (48)	NS	76 (55)	71 (62)	NS

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Stay-at-home order and reduced access to physical activity worsened glycemic control in youth with T2D of other countries [4,5]. The lack of changes in clinical and metabolic data that we observed in youth with DT2 could be explained by the increased attention of parents to their children during family constriction in the home. Continuous and accurate data collection is needed for different T2D pediatric populations to better understand the trends and outcomes for this population during sudden lifestyle changes.

Declaration of competing interest

The authors have no competing interests to declare.

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