# Mini Review



# Body mass index in women with leiomyomas: a study in italian population

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## Abstract

A positive association between obesity and uterine leiomyomas has been reported in several polulations. In the present note we have carried a study of Body Mass Index distribution in a sample of women with leiomyomas from the population of Rome. We studied 209 women with leiomyomas requiring surgical intervention and 137 women of comparable age without clinical signs of leiomyomas as controls. The proportion of both overweight and obese subjects is much higher in women with leiomyomas than in controls. Age and blood glucose level have shown a positive correlation with Body Mass Index. The positive association between leiomyomas and obesity is confirmed in our population.

## Introduction

A positive association between obesity and uterine leiomyomas has been reported in several polulations [1-4]. Experimental observations suggest that adipocytes enhance leiomyomas predisposition via INF- $\alpha$ proinflammatory cytokine [5].

In the present note we report a study of Body Mass Index (BMI) distribution in a sample of women with leiomyomas requiring surgical intervention and in a sample of women of comparable age without clinical signs of the tumor.

## Material and methods

Two hundred nine women with leiomyomas requiring surgical intervention and 137 women of comparable age without clinical signs of leiomyomas have been studied in the population of Rome.

Informed consent was obtained by these women to partecipate to the study that was approved by the Council of Department. The study was performed a few years ago before the istitution of an Ethical Committee.

Statistical analyses were performed by commercial software (SPSS).

#### Results

Table 1 shows demographic and clinical data of the sample study.

In Table 2 the BMI distribution of women with leiomyomas is compared with that of a sample of healthy subjects from the same population and of comparable age. The proportion of both overweight and obese subjects in women with leiomyomas is much higher than that in controls.

An analysis of relationship of BMI has been performed with the following variables: smoking, allergy, degree of instruction, treatment with estroprogestinics, localization, dimension of leiomyomas, age, blood glucose level, number of pregnancies, number of abortion. Age and blood glucose only have shown a positive correlation (p<0.01) with BMI. A Principal Component Analysis has confirmed such association:

BMI, age and blood glucose only contribute significantly to the most important component (data not shown).

Table 3 analyzes in more details the relationship of BMI with blood glucose and age: age and blood glucose are progressively increasing

Table 1. Demographic and clinical data of the sample study.

Parameter	Mean	Standard Error	<b>Proportion %</b>
Age (years)	43.02	0.64	
Weight (kg)	67.54	0.86	
Height (cm)	161.95	0.43	
Smoker			25.9%
Intramural			19.7%
Subserosal			77.0%
Intramural and subserosal			3.2%
Pain			71.4%
Bleeding			85.5%

Table 2. Body mass index distribution in women with leiomyomas and in controls.

	BMI			
	≤ 25	25-30	>30	
Women with leiomyomas	96	85	28	
Controls	99	27	11	
Chi square test of	independence			
X <sup>2</sup> df	р			
23.528 1	6.8x10 <sup>-6</sup>			

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		Blood glu	Blood glucose level		Controls		Age (years)		Controls	
		Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	
BMI	≤ 25	90.26	13.53	88.23	7.71	41.20	9.30	36.21	9.35	
	25-30	97.25	17.09	94.44	9.99	43.12	9.64	43.04	9-85	
	>30	108.00	30.19	100.91	21.22	47.68	7.73	46.64	12.60	
Variance ar	nalysis	P=0	.013	P=	0.000	P=0	.005	P=(	0.000	
Linear correlation		P^0	P^0.003		P=0.000		P=0.002		P=0.000	

Table 3. The relationship of BMI with blood glucose level and age in women with leiomyomas and in controls.

with the increase of BMI. In women with leiomyomas the pattern is similar to that observed in controls.

The positive association between obesity and leiomyomas is confirmed in Italian population: obesity and overweight seem to

predispose to clinical manifestations of the tumor requiring surgical

intervention. Among the variables examined blood glucose level and

age are correlated with BMI, however, the pattern of correlation

observed in women with leiomyiomas is similar to that observed in

Discussion

controls.

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