*Dr. Diego Mezzatenta[3], Dr. Alessandra Sforza[1],
Prof. Linda Vignozzi[2], Prof. Mario Maggi[2]*
[1]Maggiore Hospital, Endocrinology, Bologna, Italy
*[2]University of Florence, Experimental and Clinical
Biomedical Sciences, Florence, Italy*
*[3]IRCCS Istituto delle Scienze Neurologiche, RCCS Istituto
delle Scienze Neurologiche, Bologna, Italy*

Objectives: Hyperprolactinemia has been proven to induce hypogonadism and metabolic derangements in both genders, while the consequences of prolactin (PRL) deficiency have been poorly investigated. The aim of the study is to systematically review and analyze data from clinical studies focusing on the metabolic consequences of abnormally high prolactin levels (HPRL) and low prolactin levels (LPRL).

Methods: A comprehensive systematic review was performed using Medline, Embase and Cochrane search. In particular, two separate literature searches (one for HPRL and one for LPRL) until 31 March 2022 for published English-language articles were performed.

Results: 17 studies were included in the analysis of HPRL. When compared to controls, patients with HPRL showed worse body composition. Moreover, higher total (12.55 [1.59-23.52] mg/dL p=0.02) and low-density lipoprotein (LDL)-cholesterol (13.40 [4.07-22.74] mg/dL p<0.001) as well as higher triglyceride levels (20.99 [9.36-32.63] mg/dL p<0.001) were observed in patients with HPRL. Finally, when glucose profile was analyzed, subjects with HPRL were characterized by higher HOMA index and insulin levels. Dopamino-agonist therapy resulted in an improvement of total (-19.26 [-25.22;-13.29] mg/dL p<0.001) and LDL cholesterol (-18.84[-24.44;-13.24] p<0.001) as well as triglyceride levels, fasting glycaemia and HOMA index.

12 cross-sectional and 3 longitudinal studies were included in the analysis of LPRL. Subjects included in cross-sectional studies, and with LPRL, showed worse lipid profiles and higher fasting glucose when compared to controls. The age-adjusted probability of diabetes was increased in subjects with LPRL (OR=1.60[1.43;1.79] p<0.001. Similar risk was observed when longitudinal studies were considered (OR=1.30[1.11;1.52] p<0.001 for LPRL vs. controls).

Conclusions: Pathological PRL elevation, but also its reduction, impairs metabolism and body composition in both genders, increasing the risk of diabetes. Patients with hypoprolactinemia, because of endogenous or iatrogenic conditions, deserve, as those with hyperprolactinemia, careful metabolic assessment.

Conflicts of Interest: The authors declare no conflict of interest.

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**(352) THE METABOLIC ROLE OF PROLACTIN: A
SYSTEMATIC REVIEW AND META-ANALYSIS**
*Dr. Giovanni Corona[1], Prof. Giulia Rastrelli[2],
Dr. Paolo Comeglio[2], Dr. Federica Guaraldi[3],*