FOLLICULAR LYMPHOMA INCIDENCE AND MORTALITY IN RELATION TO OVERWEIGHT, OBESITY AND PHYSICAL ACTIVITY: A META-ANALYSIS

Ilija Golubović¹,², Goran Marjanović¹,⁶, Danijela Rađoković³,⁶, Dušan Sokolović⁴, Aleksandar Karanikolić²,⁶, Milan Rađoković²,⁶, Milorad Pavlović⁵

¹Hematology and Immunology Clinic, Clinical Center Niš, Niš, Serbia
²General Surgery Clinic, Clinical Center Niš, Niš, Serbia
³Endocrinology Clinic, Clinical Center Niš, Niš, Serbia
⁴University of Niš, Faculty of Medicine, Department of Biochemistry, Niš, Serbia
⁵Thoracic surgery Clinic, Clinical Centre Niš, Serbia
⁶University of Niš, Faculty of Medicine, Niš, Serbia

Contact: Ilija Golubović
Clinical Center Niš
Bld. Dr Zoran Đinđić 48, 18000 Niš, Serbia
E-mail: golubovicilija@yahoo.com

In the last few years, there has been a growing interest in exploring the association between risk factors such as overweight, obesity and physical activity, and incidence of various cancers.

Meta-analysis was performed to investigate the risk ratio of follicular lymphoma incidence and mortality in overweight and obese individuals, and in individuals with a different physical activity levels using the random-effects model. A literature search through September 2016 was performed. Case-control studies accounted for over 2,100 cases and 12,700 controls, whereas cohort studies accounted for over 2,600 cases in cohort of about 3,000,000 individuals.

In overweight individuals (body mass index between 25 and 29.99 kg/m²) risk ratio for the development of follicular lymphoma was 1.03 (0.95-1.11; 95% CI; p = 0.51) and in obese (body mass index ≥ 30 kg/m²) it was 1.15 (1.01-1.31; 95% CI; p = 0.04) when compared to individuals with normal body mass index (< 25 kg/m²). The risk ratio of specific follicular lymphoma mortality in overweight was 0.59 (0.38-0.91; 95% CI; p = 0.02), while in obese patients it was 1.08 (0.68-1.71; 95% CI; p = 0.75). In patients with the highest physical activity levels, the risk ratio for follicular lymphoma occurrence was 0.95 (0.75-1.21; 95% CI; p = 0.68) when compared to patients that had the lowest physical activity levels.

In summary, our meta-analysis has shown statistically significant direct association between obesity and follicular lymphoma incidence.


Key words: follicular lymphoma, meta-analysis, obesity, overweight, physical activity