40) The Comparison of Three Predictive Indexes to Discriminate Malignant Ovarian Tumors from Benign Ovarian Endometrioma: The Characteristics and Efficacy.

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**Abstract**

This study aimed to evaluate the prediction efficacy of malignant transformation of ovarian endometrioma (OE) using the Copenhagen Index (CPH-I), the risk of ovarian malignancy algorithm (ROMA), and the R2 predictive index. This retrospective study was conducted at the Department of Gynecology, Nara Medical University Hospital, from January 2008 to July 2021. A total of 171 patients were included in the study. In the current study, cases were divided into three cohorts: pre-menopausal, post-menopausal, and a combined cohort. Patients with benign ovarian tumor mainly received laparoscopic surgery, and patients with suspected malignant tumors underwent laparotomy. Information from a review chart of the patients' medical records was collected. In the combined cohort, a multivariate analysis confirmed that the ROMA index, the R2 predictive index, and tumor laterality were extracted as independent factors for predicting malignant tumors (hazard ratio (HR): 222.14, 95% confidence interval (CI): 22.27-

2215.50, *p* &lt; 0.001; HR: 9.80, 95% CI: 2.90-33.13, *p* &lt; 0.001; HR: 0.15, 95% CI: 0.03- 0.75, *p* = 0.021, respectively). In the pre-menopausal cohort, a multivariate analysis confirmed that the CPH index and the R2 predictive index were extracted as independent factors for predicting malignant tumors (HR: 6.45, 95% CI: 1.47-28.22, *p* = 0.013; HR: 31.19, 95% CI: 8.48-114.74, *p* &lt; 0.001, respectively). Moreover, the R2 predictive index was only extracted as an independent factor for predicting borderline tumors (HR: 45.00, 95% CI: 7.43-272.52, *p* &lt; 0.001) in the combined cohort. In pre-menopausal cases or borderline cases, the R2 predictive index is useful; while, in post-menopausal cases, the ROMA index is better than the other indexes.

**Keywords:** CPH index; R2 predictive index; ROMA index; borderline ovarian tumor; endometriosis associated ovarian cancer; malignant ovarian tumor; ovarian endometrioma.