In the neurosurgical field, the co-existence of Lactotroph adenoma and PCOS is not common. However, neurosurgeons often treat patients who are referred from gynecology. Because most of these patients are young and reproductive-aged, it is difficult for a neurosurgeon to come up with a treatment plan alone. Kim et al. investigated the prevalence of Lactotroph adenomas in PCOS patients, the cutoff prolactin (PRL) level to detect PAs, and the treatment strategy, then assessed the relationship between these diseases via a literature review. M

Medical records from November 2009 to March 2020 were reviewed. A total of 657 PCOS patients were enrolled. Initial prolactin levels were investigated and hyperprolactinemic patients were selected. As a result of sella magnetic resonance imaging (MRI), patients were divided into 2 groups of those with hyperprolactinemia but without PAs (group A) and those with both hyperprolactinemia and PAs (group B), respectively. We then compared and analyzed each group to find the characteristics and statistical differences. Receiver operating characteristic (ROC) curve analysis was performed to determine a cutoff value of the serum PRL level that could detect PAs in hyperprolactinemic PCOS patients. Results: Of 657 patients diagnosed with PCOS, 76 patients had hyperprolactinemia (76/657, 11.6%). Sella MRI was performed in 56 patients, excluding 20 patients for various reasons. Patients in groups A and B numbered 43 and 13, respectively, and the mean serum prolactin level significantly differed between the groups (39.89 ± 41.64 vs. 108.59 ± 60.70 ng/mL, $P < 0.001$). Based on the ROC curve analysis of the prolactin threshold level for predicting PAs in PCOS patients, the area under the ROC curve was 0.853 (95% confidence interval, 0.733-0.934; $P < 0.001$), and the sensitivity and specificity were 76.9% and 86.1%, respectively. Ultimately, the cutoff value for prolactin level was 52.9 ng/mL.

PCOS and hyperprolactinemia are common causes of infertility in reproductive-age women. PCOS patients with a PRL level of ≥ 52.9 ng/mL may need to undergo sella MRI for detecting PAs. To help ensure a favorable clinical course for these patients, systematic diagnosis, treatment, and follow-up plan should be established. Therefore, a multidisciplinary approach involving both neurosurgery and gynecology is essential [1]

[1]

Kim SI, Yoon JH, Park DC, Yang SH, Kim YI. What is the optimal prolactin cutoff for predicting the presence of a pituitary adenoma in patients with polycystic ovary syndrome? Int J Med Sci. 2023 Feb 13;20(4):463-467. doi: 10.7150/ijms.80891. PMID: 37057215; PMCID: PMC10087626.

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