

The impact of lymph node ratio on tumor recurrence and survival after staging laparotomy for advanced epithelial ovarian cancer

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Objective: The aim of study is to determine whether the ratio of metastatic to examined lymph nodes (lymph node ratio: LNR) are associated with tumor recurrence or survival in patient with advanced epithelial ovarian cancer.

Method: Retrospective data was reviewed from January 2004 to April 2009. 151 eligible patients with International Federation of Gynecology and Obstetrics (FIGO) stage IIIC and IV epithelial ovarian carcinoma underwent staging laparotomy at Yonsei University Health System. Analysis included LNR, age, BMI, histology, ascites, stage, histology, postoperative adjuvant therapy, residual tumor size and intraperitoneal seeding. The impact of LNR on tumor recurrence or survival was examined using univariate and multivariate analysis.

Result: The median number of lymph node retrieval was 22 (interquartile range: 11-31). Patients were consisted of 125 (82.8%) of stage IIIC, and 26 (17.2%) of stage IV disease. At a median follow up of 34 months, 82 events (i.e recurrences or deaths) were observed and 74 patients had died. Mean LNR was 0.23 (paraortic LNR: 0.31, pelvic LNR: 0.14, respectively). LNR was associated with progression free survival (PFS) (hazard ratio [HR]= 1.73, 95% CI: 1.48-1.97, P<0.001) and overall survival (OS) (HR= 1.68, 95% CI: 1.36-1.85, P=0.041) by univariate analysis. Among patients with more than 2cm sized residual tumor, LNR with more than 0.2 was negative independent prognostic factor for both PFS and OS in multivariate Cox proportional hazard regression, with hazard ratios of 1.36 (95% CI: 1.13-1.54, P=0.008) and 1.33 (95% CI: 1.21-1.48, P=0.006), respectively.

Conclusion: In patients with incomplete optimal debulking, increasing LNR was independently negative prognostic factor for poor prognosis in advanced epithelial ovarian cancer.