cantly with the presence of distant metastases. Depth of invasion (p = 0.1), tumor size ($p = 0.9$), parametrial involvement ($p = 0.5$), CLS involvement ($p = 0.3$), histologic cell types ($p = 0.1$), and uterine extension ($p = 0.2$) were not correlated with distant metastases.

DISCUSSION

Cancer staging serves to provide information about disease spread, prognosis, and treatment planning, and facilitates the communication of treatment results. The earliest cervical cancer staging, established by the German Gynecological Society, was focused on operability. The International Federation of Gynecology and Obstetrics (FIGO) first accepted clinical staging in 1950. Although there were modifications through the years, the clinical staging system of FIGO has not changed dramatically since 1962.[11] Current clinical staging for cervical cancer was revised in 1995, with stage IA (microscopic lesions) being subdivided into IA1 and IA2 based on the depth of invasion being less than or greater than 3 mm. Stage IB was also subdivided into IB1 and IB2 for clinical lesions that are less than or greater than 4 cm, respectively implying that this involvement is an important prognostic factor in cervical cancer.

The factors that had significant correlation with treatment failure on multivariate analysis in our study were the presence of positive lymph nodes, depth of invasion, tumor size, parametrial extension, and positive surgical margins.

Delgado et al., in a GOG study,[12] concluded that CLS, depth of invasion, and tumor size were independent risk factors on multivariate analysis. The study included only stage IB patients and therefore could not make definitive conclusions regarding positive surgical margins and parametrial extension. Both these factors correlated strongly with treatment failure, in our study on multivariate analysis. Fuller et al. reported that tumor size, depth of invasion, and histologic grade were covariables and predictive of both lymph node metastases and recurrence in their 431 patients undergoing radical hysterectomy for stage IB or IIA carcinoma of the cervix.[13] Others have reported that in addition to nodal involvement, a number of tumor-associated characteristics are predictive of outcome in early cervical cancers.[14]

CLS involvement, uterine extension and clinical staging correlated significantly with survival on univariate but not on multivariate analysis in our study.

Histologic cell types correlated significantly with treatment failure and disease-free interval on multivariate analysis only if the small cell undifferentiated carcinomas and carcinosarcomas were included. The aggressive nature and poor prognosis associated with these tumor types are well documented by other researchers.[15-16] There were no differences in the treatment failure rates between patients with squamous cell carcinoma, adenocarcinoma, and adenosquamous cell carcinoma.

In a detailed GOG multiobserver histopathologic study of surgically treated stage IB squamous cell carcinoma, none of the commonly used grading methods were effective in predicting nodal spread or progression-free interval.[17] Tumor grade did affect the treatment failure rate in squamous cell carcinoma, but not adenocarcinoma or adenosquamous cell carcinoma in our study. Treatment failure was 38.2% for grade I, 19.8% for grade II, and 29.0% for grade III SCC. The finding of highest treatment failure in grade I SCC is consistent with the finding by Reagan and Fu in their review of 5 large series for stage I tumors treated by radiotherapy.[18] Our patients, however, were treated surgically. Thus, the assumption of radioresistance might not be the only reason for poor prognosis in large cell keratinizing carcinomas.

Among these risk factors, the effect of tumor size on treatment failure rates is of special interest. There are reports using different lesion sizes as a predictor of survival. Our findings show a gradual increase of treatment failure rates with an increase in tumor size. Tumors exceeding any of the given values, whether 1, 2, 3, 4 or 5 cm, correlated significantly with survival. Other studies have supported this observation.[13,19,20] This brings into question whether the setting of 4 cm as the cut-off point in categorizing stage IB1 to IB2 should be maintained, especially since it affects management decisions. Anything over 1 cm has significantly increasing treatment failure rates, and there are other independent risk factors that affect the treatment outcomes regardless of size that should be taken into consideration on a case-to-case basis. This would enable institutions to decide on the use of adjuvant therapy regardless