Glassy Cell Carcinoma of the Cervix: A Systematic Review and Meta-Analysis

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Background

Glassy cell carcinoma of the cervix (GCCC) is a subtype of mixed adenosquamous cervical cancers. Other mixed adenosquamous cervical cancers include mature adenoacanthoma and signet-ring-cell type, with GCCC being the most undifferentiated form. Glassy cell features have also been identified in undifferentiated large-cell nonkeratinizing cervical cancers.\(^1\) First described in 1956 by Glucksmann and Cherry, GCCC is historically known to respond poorly to radiation and surgery with the poorest survival rates.\(^2\) Currently, management of GCCC is not well-established due to lack of prospective studies.

Materials & Methods

Cases from a retrospective chart review of all diagnosed GCCC at two academic centers from 1990-2011 were combined with GCCC cases reported in published studies from 1976-2011. Published reports were identified by a PubMed database search up to Oct 2012. The following search terms were included: ‘glassy cell cervical cancer’, ‘glassy cell carcinoma’, ‘adenosquamous cervical cancer’, and ‘mixed adenosquamous cervical cancer’. All papers reporting glassy cell carcinoma with abstracts published in English and adequate information (including patient demographics, stage, primary treatment, clinical course, and survival status) independent of pathological criteria of GCCC at each hospital were included.

The following information was collected from published papers and charts at our institutions: number of cases at our institutions, race, age at presentation, stage, primary treatment, clinical course, follow-up management, and survival status. Data analysis was performed with descriptive statistics and Kaplan-Meier plots.

Results

A total of 292 patients from 24 cases series, 15 case reports and 13 patients from our institutions were included. A total of 292 patients from 24 cases series, 15 case reports and 13 patients from our institutions were included.

The mean and median age was 46.9 and 45 years, respectively (range 12-87), without the typical bimodal distribution of carcinoma of the cervix.

Among those studies reporting patient race, 64.9% (50/77) of the patients were white, 22.1% (17/77) were black, and 13% (10/77) were of another race.

Primary treatment approach varied based on stage. The predominant amount of Stage I patients were treated with either surgery alone or a combination of surgery and radiation. Most of stage II patients were treated either with radiation alone, surgery and radiation, or with surgery, chemotherapy, and radiation. Majority of stage III patients were treated with radiation alone.

Survival rates for early stage glassy cell carcinoma of the cervix are lower than reported rates of squamous cell cervical cancer. Given both the rarity of the subtype and the historical belief of poor response to treatment, glassy cell carcinoma of the cervix has been managed with a variety of treatment approaches. Despite these perceptions, there does appear to be a survival benefit in early stages treated with radiation therapy. However, recent advances in chemotherapy may prove to be beneficial adjunctive treatments as well.

References


Conclusions

The overall recurrence rate across all stages was 22%.

Glassy cell carcinoma of the cervix is a rare tumor accounting for well less than 10% of the subtypes of cervical carcinoma. The majority of patients are white and are diagnosed at earlier stages (Stage I-II).

Median overall survival is 25 months and 5-year overall survival is 54.8%. There is a significant decrease in overall survival with more advanced disease. Survival rates for early stage glassy cell carcinoma of the cervix are lower than reported rates of squamous cell cervical cancer.

There was a significant difference in survival by stage (p<0.01). The median OS for Stage I was not reached. The mean OS for Stage I (n=61) was 233.9 months (95% CI 182.7-285.1). Median OS for Stage II (n=54) was 25.0 months (95% CI 10.7-39.3), for Stage III (n=24) 18.0 months (95% CI 7.1-28.9) and Stage IV (n=7) 3.0 months (95% CI 1.7-4.3).

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