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High Grade Neuroendocrine Carcinoma of the Uterine Cervix: Outcomes and the Role of Radiation and Chemotherapy – The University of Iowa Experience

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Background: High-grade neuroendocrine carcinoma of the uterine cervix (cNEC) is a rare and aggressive cancer, and the optimal treatment remains uncertain. We report 36 cases seen at the University of Iowa between 1977 and 2010.

Methods: Cases were identified by searching our institutional database. Only patients (pts) with pathology-confirmed cNEC were included.

Results: 36 cases with follow-up information were identified. The median age at diagnosis was 49 years (range 26 – 77). FIGO staging was IB1 for 14 pts (39%), IB2 for 3 (8%), II for 7 (19%), and 12 (34%) had stage III or higher. 17 pts (47.2%) underwent resection, 20 pts (56%) had radiation therapy (RT), and 27 pts (82%) received chemotherapy (ChT). The median survival (MS) for the entire cohort was 20.7 months (ms) with 23% 5-year overall survival (5-OS) and 8% 10-year OS. Stage was a strong predictor of survival. Pts with stage IB1 or less had longer MS and 5-OS compared to those with higher stage (MS 42 vs. 11.1 ms, p=0.008, 5-OS 47 vs. 6%).

Complete resection predicted better outcome (MS: 50 vs 9.3 ms, p=0.0004**,** 5-OS: 50 vs. 0%). Of 17 resected pts, 7 recurred after a median of 19.4 ms (range 7.5 – 43), and all but 1 died.

RT did not seem to improve survival (MS 16 months for RT vs. 23 months for no RT, p=0.6). RT was not associated with outcome regardless of surgery. Resected pts had MS of 43.8 ms with RT vs. 128.5 ms without RT, (p=0.76). Pts with unresectable disease demonstrated MS of 11.8 ms with, and 10.5 ms without RT (p=0.8).

ChT was associated with better survival in pts with unresectable disease. Pts receiving ChT had MS of 10.8 ms vs. 2.7 ms (p=0.006) in those who did not. None of these pts survived > 5 years. Platinum with etoposide was used in 73%. Partial response or stable disease were seen in 50% with mean duration of response of 9.1 ms. Second line ChT at progression was used in 44.4%. Pre- and post-operative ChT in resectable disease did not impact survival (MS 45 ms on ChT vs. 156.5 ms with no ChT (p=0.37).

Conclusion: The prognosis of advanced cNEC is very poor and surgery in early stages resulted in the best outcome. RT was not associated with improved survival in this study. ChT seems beneficial in unresectable disease, but the effect of the second line ChT remains undefined. Overall, the treatment outcomes remain unsatisfactory; better treatment options are needed.