Neuroendocrine Tumor Incidence Over 18 Years: Kentucky Cancer Registry vs SEER

Aman Chauhan[1]; Neha Ray[2]; Bill Huang[3]; Eric B. Durbin[3]; Lowell Brian Anthony[1]; Thomas Tucker[3]

[1]Markey Cancer Center, University of Kentucky; [2]University of Cincinnati School of Medicine; [3]Kentucky Cancer Registry

Background: Neuroendocrine tumors (NETs) have a low incidence but a relatively high prevalence. Over the last three decades, NETs incidence has risen 5-fold. Greater awareness, pathological re-classification and improved diagnostics may account, at least in part, for this increase. We conducted an observational study to test the hypothesis that NETs incidence in Kentucky is comparable to that reported in SEER.

Methods: Kentucky Cancer Registry (KCR) and SEER databases between 1995 and 2012 were reviewed. State and local institutional review boards approved access to KCR. Incidence data were adjusted for population and plotted. A 'best fit' regression analysis and ANOVA were performed using SAS with $p < 0.05$ considered statistically significant.

Results: KCR recorded 5,641 individuals with newly diagnosed NETs between 1995-2012.The incidence of NETs in KCR increased from 3.8 (1995) to 10.7 (2012) per 100,000 cases, while it increased from 4.0 (1995) to 6.4 (2012) in the SEER database. The incidence rates in both KCR and SEER databases between 1995-2012 were linear with R2 values of 0.95 and 0.90, respectively. The incidence slopes were defined by the following equations: $y = 0.4219x-838$ (KCR) and $y = 0.1407x-277$ (SEER). The difference between these incidence rates was statistically significant ($p < 0.0001$).

Conclusion: NETs incidence between 1995-2012 showed a linear increase in both KCR and SEER databases. However, the rate of increase was noted to be significantly higher in Kentucky when compared with national data. Specifically, for 2012, the incidence of NETs in Kentucky approached almost twice to that reported in SEER.

Presented at NANETS 2016