Title: The role of second line chemotherapy in small cell lung cancer: A retrospective analysis

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Body: PURPOSE: To evaluate the benefit of second line chemotherapy with platinum based treatment in patients with recurrent small cell lung cancer (SCLC). PATIENTS AND METHODS: 764 patients first diagnosed with SCLC received first-line platinum based chemotherapy for a maximum of six cycles. 535 patients continued with follow up or best supportive care (BSC) if needed and 229 patients who progressed after the completion of first line chemotherapy were treated with second line chemotherapy at the time of progression: 103/229 patients received paclitaxel 190mg/m2 and carboplatin 5.5AUC(PC) while 126/229 patients received etoposide 200 mg/m2 and carboplatin 5.5 AUC(EC) every 28 days. RESULTS: Patients administered second-line chemotherapy lived significantly longer with median survival 422 days compared to 228 days in patients with BSC only (P<0.001). The BSC patients had significantly worse PS status. Patients who received PC as second line chemotherapy lived 462 days(95% CI 409-514), versus 405 days in EC group(95% CI 371-438), statistically not significant (p=0.086).Overall response rate was 8% for PC group and 6% for EC group. From the 103 pts who received PC as second line chemotherapy, 85pts received the same agents as first line treatment with initial response 47%. CONCLUSION: Patients administered new generation second-line chemotherapy had significantly longer survival than patients administered BSC. Continuation with carboplatin/paclitaxel or carboplatin/etoposide as second line chemotherapy has no significant survival impact and did not improve responses rates. Sensitivity to front line treatment is a prognostic factor to OS in SCLC patients.