

Memorial Regional Cancer Center

Stage III A&B Lung Cancer 2008: What is the best therapy?

ABSTRACT: 202 consecutive patients with a diagnosis of stage III A&B NSCLC (non small cell lung cancer) at the Memorial Cancer Center (MRCC) for 2000-2006. Twenty-one patients were excluded because they received treatment elsewhere. Fifty-one percent were IIIA and 49% were IIIB. These cases were a subset of the 150 new cases of lung cancer seen at MRCC per year.

Fourteen percent (#26) had no therapy secondary to medical co morbidities; surgery alone, or with radiation and/or chemotherapy in an adjuvant or neoadjuvant setting was performed in 23% (#41) of the patients. Chemotherapy was used alone in 12% (#22), radiation therapy in 12% (#22), while in combination; they were used in 39% (#70) of the patients.

Surgery alone was used in seven patients with a 28% five-year survival. Radiation and chemotherapy, alone, offered a 4.8% and 10.4% five-year survival comparable to the combined seen for all patients in IIIA&B group in the National Cancer Data Base (NCDB).

When we added radiation/chemotherapy above to surgery, we also saw an improvement in survival. Surgery with radiation and chemotherapy or surgery with chemotherapy alone (#31) had a 48% and 58.3% survival rate at five years. Surgery with radiation alone offered no five-year survival benefit, and radiation and chemotherapy together although the largest therapeutic (#70) group, cumulative survival was only slightly better than the NCDB at five years with 18% at five years rather than 8.6%.

We looked at adjuvant versus neoadjuvant therapy with radiation and/or chemotherapy in conjunction with surgery (#34). Surgery with neoadjuvant chemotherapy (#4) and surgery with adjuvant chemotherapy and radiation (#12) offered a significant survival advantage at five years, 75% versus 67%. Surgery with neoadjuvant radiation and chemotherapy offered only 42% survival rate at five years along with surgery and chemotherapy given as adjuvant therapy. Surgery and radiation offered as adjuvant therapy offered no survival.

RESULT: Surgery when combined with neoadjuvant chemotherapy and adjuvant chemotherapy and radiation offered the best five year survival in our study.

Surgery alone, surgery with neoadjuvant chemotherapy and radiation, and surgery with adjuvant chemotherapy offered a beneficial improvement in five year survival when compared with NCDB IIIA&B controls.

STUDY GROUP: The group consisted of 181 patients (74 females and 107 males) who received all or part of their first course of therapy for Stage IIIA&B NSCLC at MRCC. Twenty-one who went elsewhere were not followed. The largest age group was 70-79 years of age. Fifty-one percent were IIIA and 49% IIIB. Histology was primarily adenocarcinoma in 32% and squamous cell also in 32%. The primary anatomical site was the upper lobe. (Fig 1.0-5.0).

Definition of IIIA Lung Cancer: Includes T1 T3, N2 MO and T3, N1, MO Lung cancers. We also included T3, N0/N1, MO—superior sulcus tumors or any cancers which locally invasive to the chest wall or diaphragm.

Definition of IIIB Lung Cancer: Includes any T, N3, MO or T4, any N, MO lesions.

Indiana Lung Cancer: Forty-seven percent of cancers were local/regional (20% local and 26% regional) at the time of the original diagnosis. Forty-eight percent had some distant spread at initial diagnosis. Staging for all cases (#1,058) at MRCC during this time frame showed 25% Stage 1, 7% Stage 2, 25% Stage 3, and 37% Stage 4.

MRCC vs National Cancer Data Base: Comparison was also made to other Comprehensive Community Cancer Centers (COMP) via National Cancer Data Base public information (#359,067). During this time frame the NCDB showed 23% Stage 1, 7% Stage 2, 25% Stage 3, and 35% Stage 4 which are comparable to MRCC as stated above. (Fig 6.0)

Study Groups: Of the 181 patients in the study, 14% (#26) had no treatment because of medical co morbidities. Twenty-three percent had surgery alone (#7) or with chemotherapy (#11) and radiation (#3) or both (#20).

Chemotherapy and concurrent radiation without surgery had #70 patients (39%),
Chemotherapy and radiation had #22 patients in each category.

Results: We looked at survival curves at five years for surgery alone, with and without radiation and/or chemotherapy in a neoadjuvant or adjuvant setting. We compared our results with a NCDB cohort of IIIA/IIIB NSCLC group of patients at five years (8.6% five year survival).

In the “alone” category which includes no treatment, surgery alone had the best survival at year number five (28.6%), with chemotherapy or radiation alone at baseline survival for the NCDB group. (8.6%). (Fig 9.0).

When we looked at the “combination” groups, surgery with chemotherapy and radiation, and surgery with chemotherapy alone both offered survival benefits (48.0% / 58.3) over surgery plus radiation. There appeared to be some benefit at five years with chemotherapy and radiation (18% versus 10%) when used in combination. (Fig. 10).

Figure 11.0 shows all of our survival curves for “alone” or in “combination” with other methods of therapy.

Our final question, revolved around whether or not adjuvant versus neoadjuvant therapy offers any benefit. Figure 12.0 shows 34 cases which compared adjuvant versus neoadjuvant therapies. Fig. 13 shows our results. Survival benefits were most affected by neoadjuvant chemotherapy alone and chemotherapy with radiation (75% versus 67%) at five years (#16).

Neoadjuvant chemotherapy with radiation and surgery with adjuvant chemotherapy also offered a survival benefit (42%) at five year survival (#15).

Surgery with adjuvant radiation offered no survival benefit.

**Memorial Regional Cancer Center
NSCLC Stage IIIA & Stage IIIB
by Accession Year: 2000 - 2006**

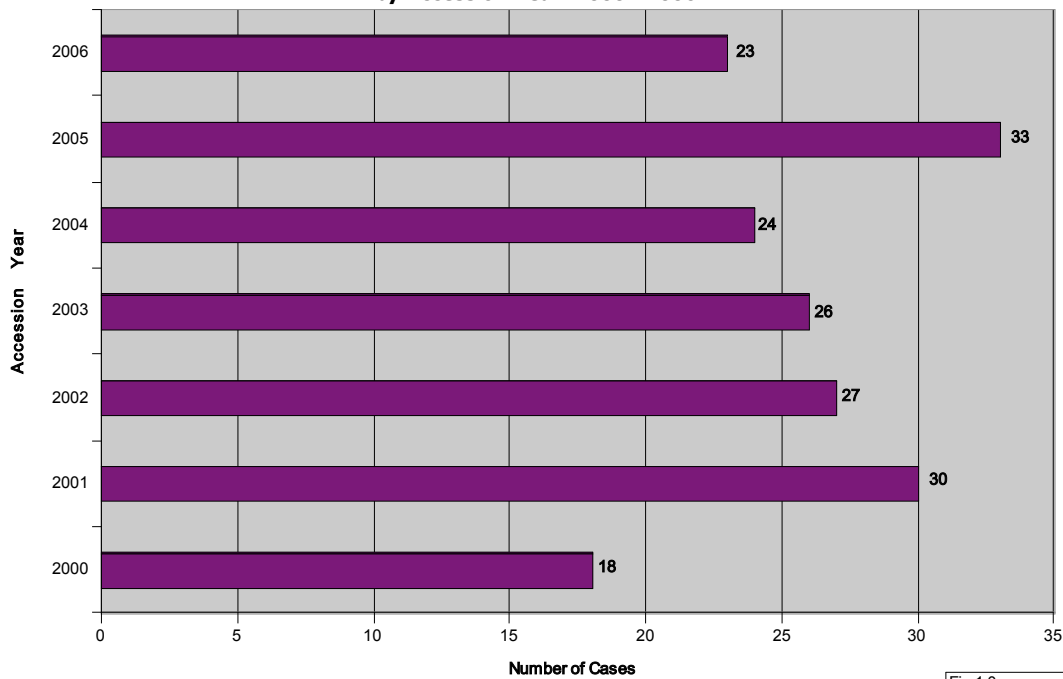


Fig 1.0

**MRCC NSCLC Stage IIIA & IIIB
Years: 2000 - 2006
by Age and Gender**

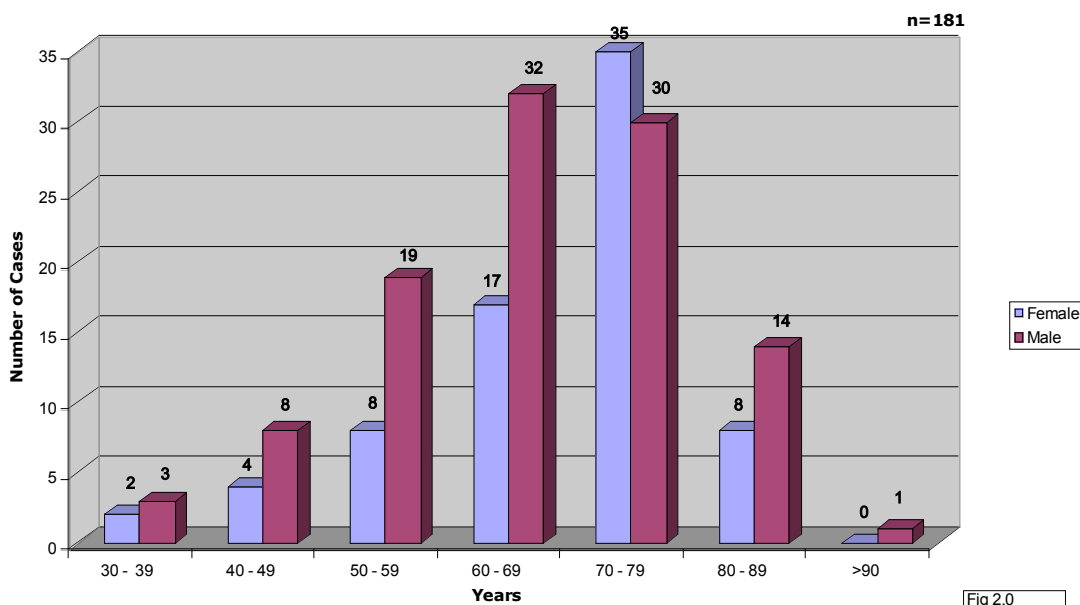


Fig 2.0

**Memorial Regional Cancer Center
NSCLC Stage IIIA & IIIB
Percentage**

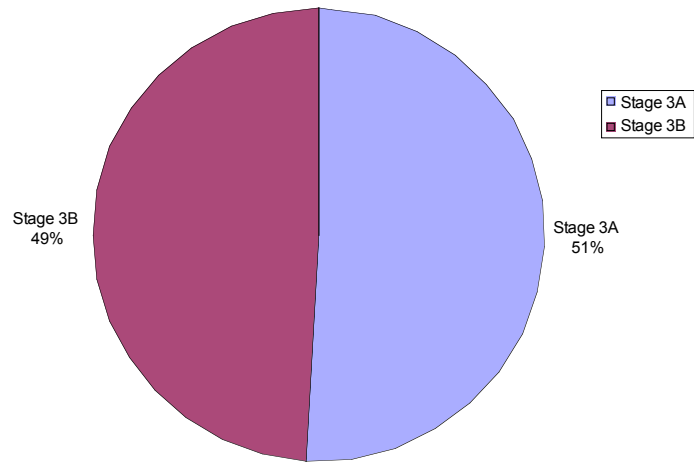


Fig 3.0

**Memorial Regional Cancer Center
NSCLC Stage IIIA & IIIB
by Histology Distribution**

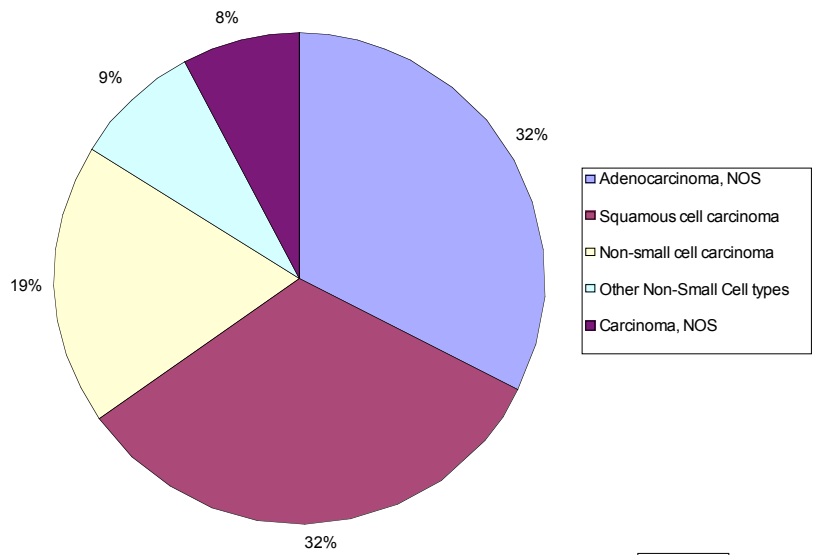


Fig 4.0

**Memorial Regional Cancer Center
NSCLC Stage IIIA & IIIB
by Site**

n = 181

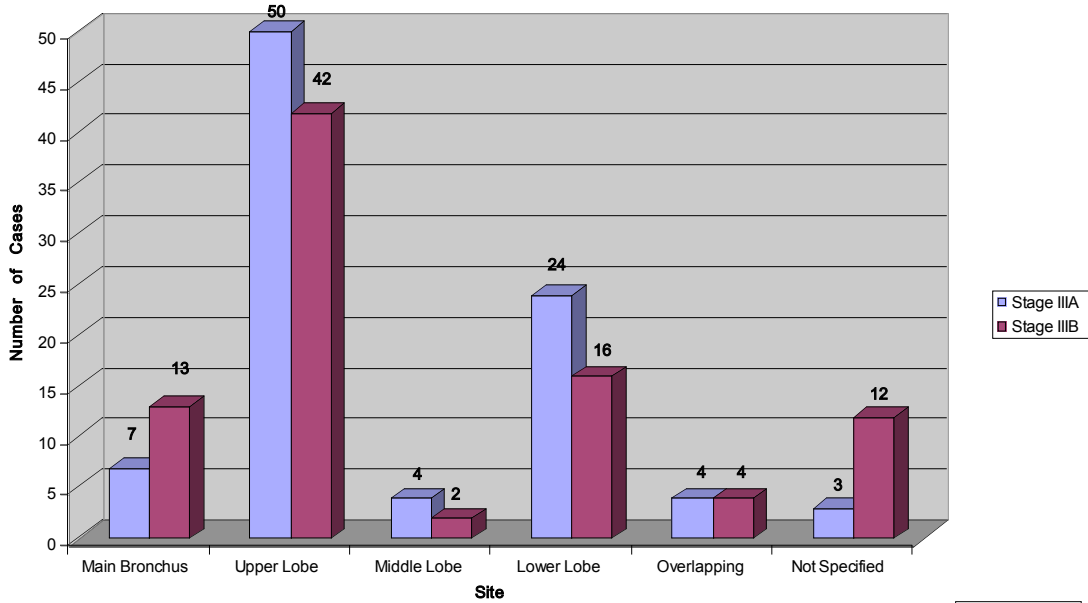


Fig 5.0

**MRCC Analytic Lung Cases 2000 - 2006 by AJCC Stage vs
other NCDB Comprehensive Community Cancer Centers**

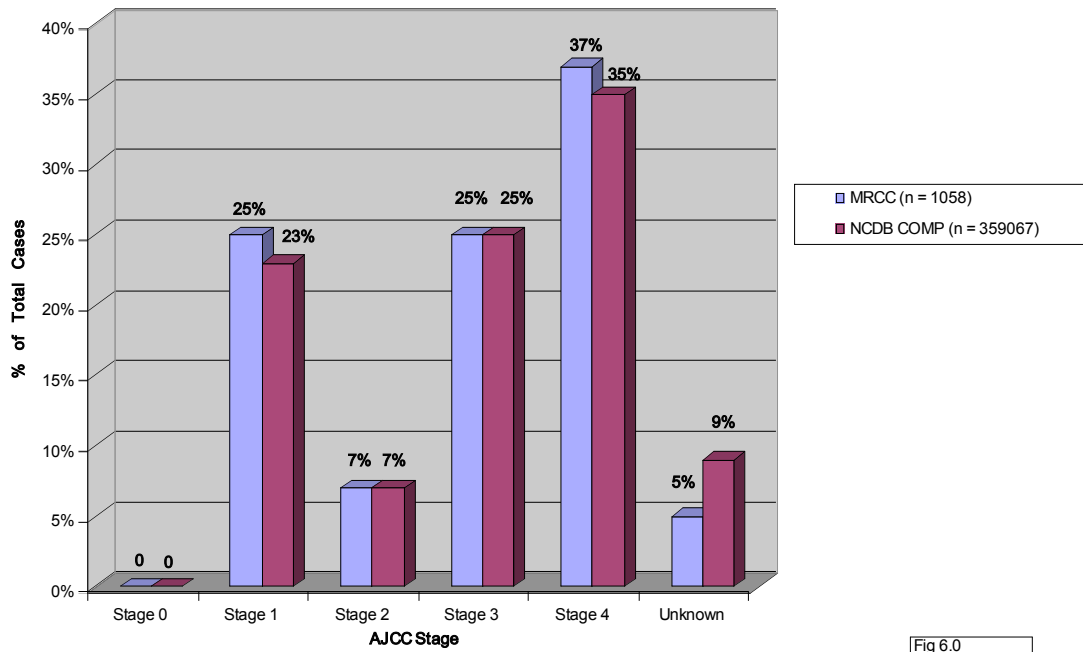
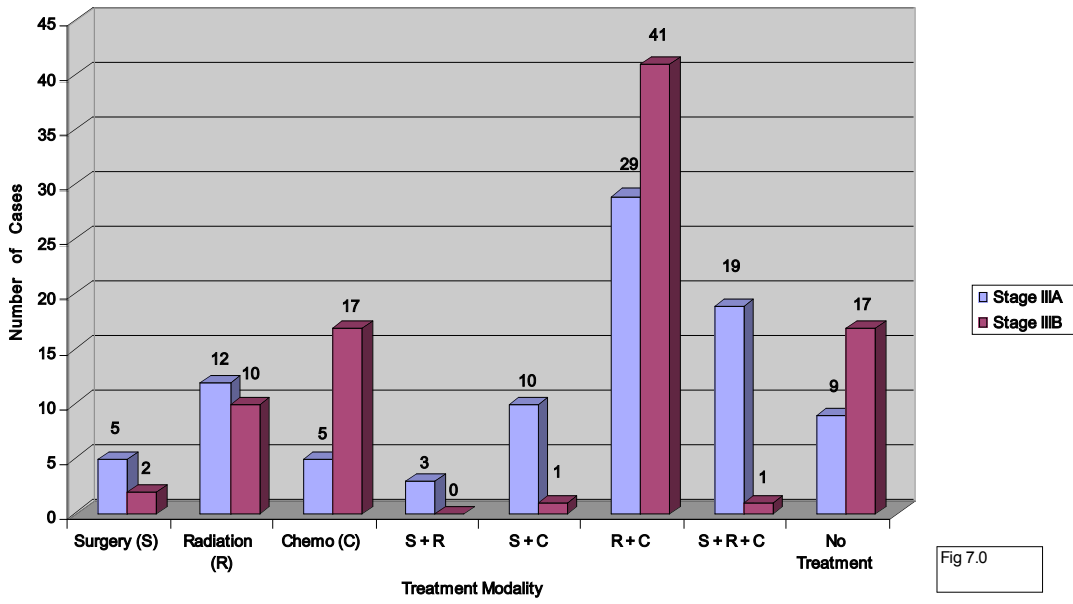


Fig 6.0

MRCC NSCLC Stage IIIA and IIIB
by 1st Course of Therapy

n = 18



Observed Survival For Lung, Bronchus - Non-Small Cell Carcinom

Cases Diagnosed in 1998 - 2001

Data from 1316 Programs [National]

WARNING: The information within this graphic is not to be used for clinical decision making.

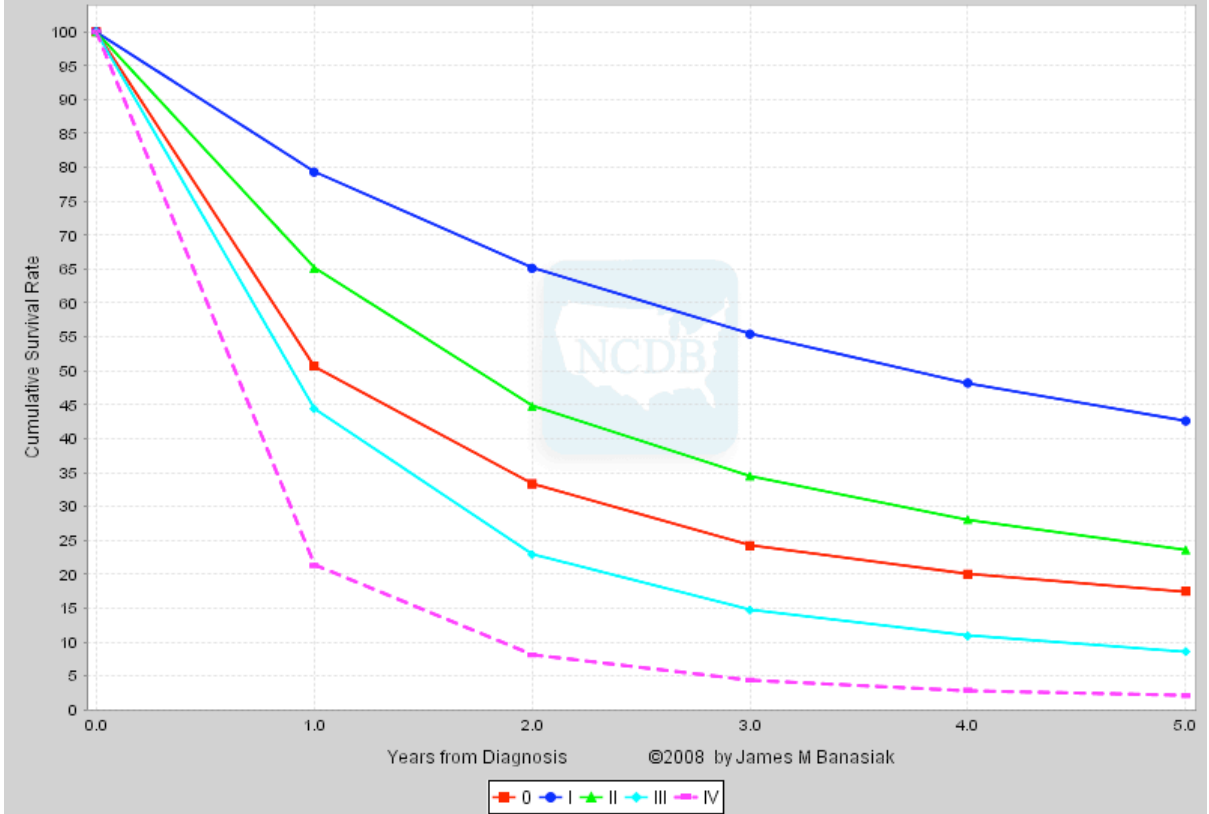


Fig 8.0

Memorial Regional Cancer Center
 NSCLC Stage IIIA & Stage IIIB
 5-Year Observed Survival by Initial

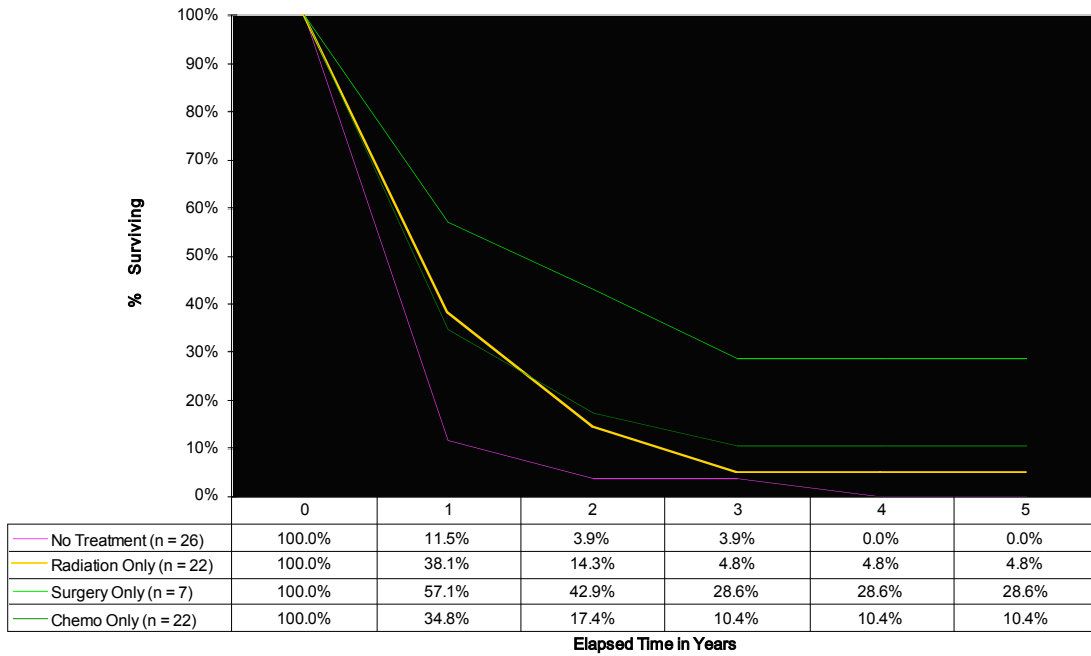


Fig 9.0

Memorial Regional Cancer Center
 NSCLC Stage IIIA & Stage IIIB
 5-Year Observed Survival by Initial Therap
 (NCDB data includes no therapy and all treatment)

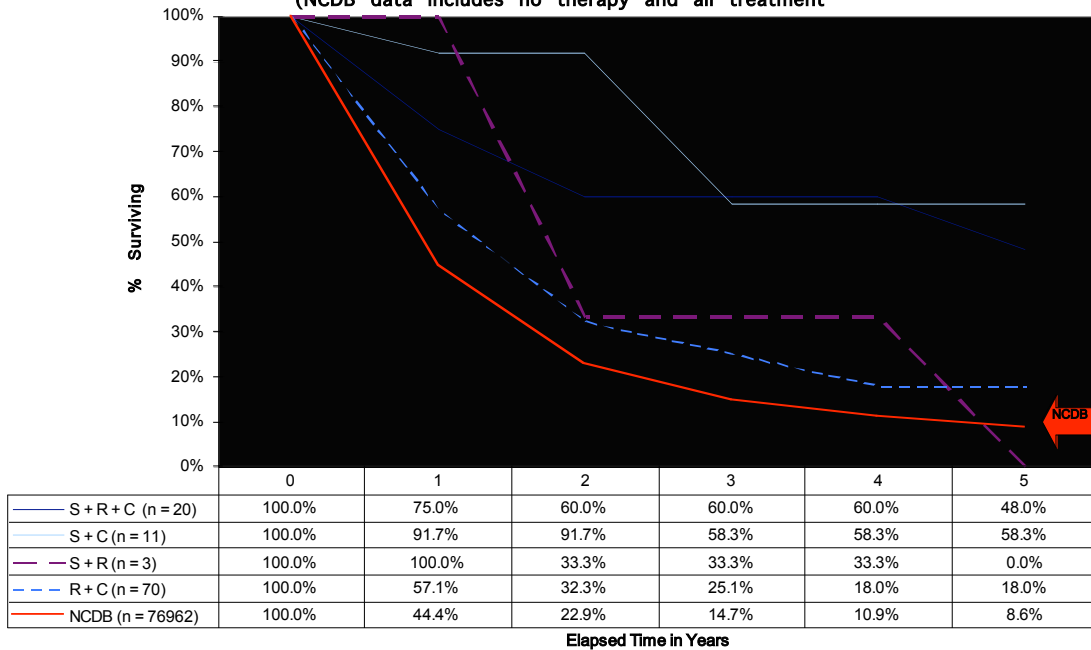


Fig 10.0

Memorial Regional Cancer Center
 NSCLC Stage IIIA & Stage IIIB
 5-Year Observed Survival by Initial Therapy
 (NCDB data includes no therapy and all treatment)

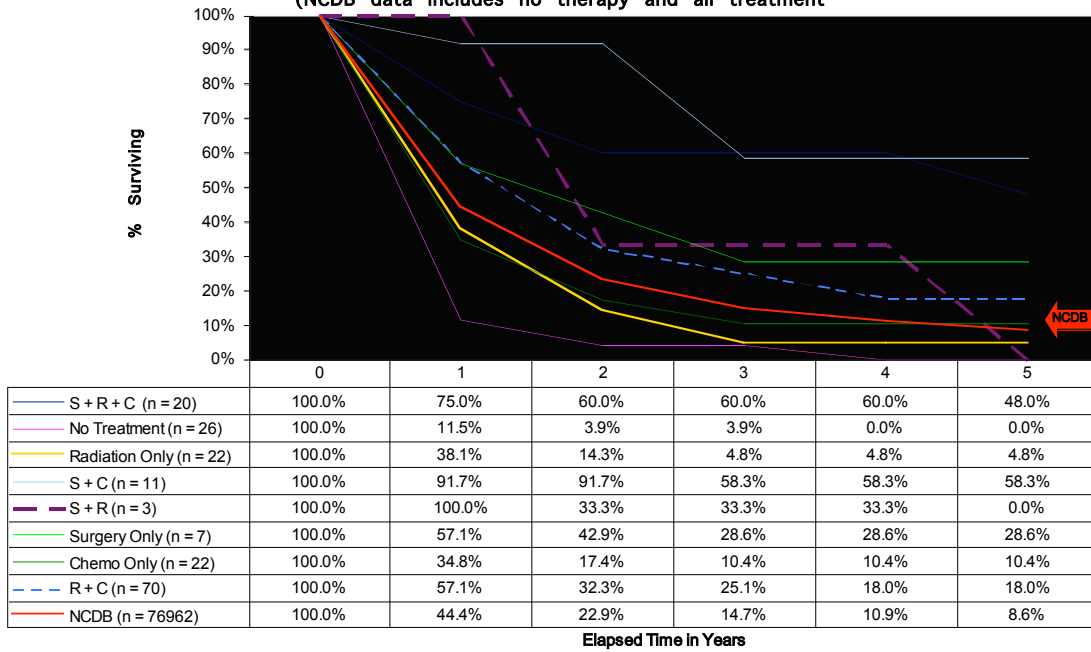


Fig 11.0

MRCC NSCLC Stage IIIA & IIIB
 Neoadjuvant Therapy vs Adjuvant Therapy

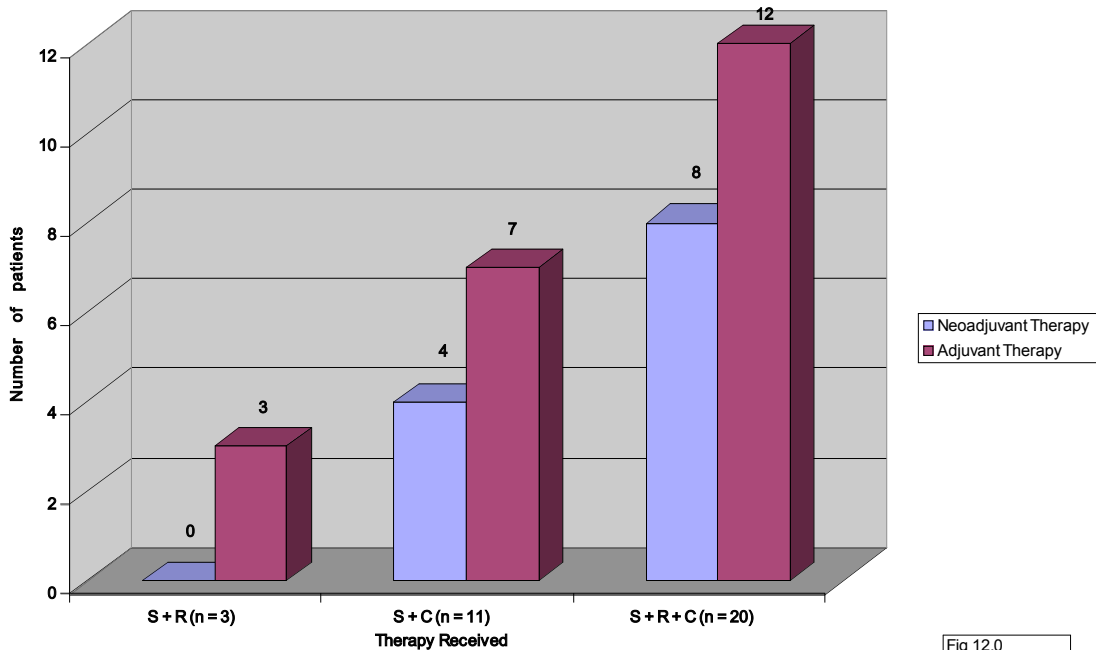


Fig 12.0

Memorial Regional Cancer Center
 NSCLC Stage IIIA & IIIB
 Neoadjuvant vs Adjuvant Observed Survival

Fig 13.0

