AN EVALUATION OF NEOADJUVANT CHEMOTHERAPY ELIGIBILITY RATES AMONG PATIENTS UNDERGOING RADICAL CYSTECTOMY FOR BLADDER CANCER

Raj Kurpad, Ian Udell, Jed Fergusson, Angela Smith, Matthew Nielsen, Eric Wallen, Michael Woods and Raj Pruthi

Division of Urologic Surgery, Department of Surgery, The University of North Carolina at Chapel Hill, Chapel Hill, NC, USA

PURPOSE

Neoadjuvant chemotherapy has been shown to be beneficial for patients with muscle invasive bladder cancer, but the use of nephrotoxic platinum-based regimens is limited by pre-operative renal function. We sought to evaluate the eligibility of patients undergoing radical cystectomy at our institution for neoadjuvant chemotherapy.

METHODS

A retrospective chart review of patients (2000-2010) who underwent radical cystectomy was performed. Only patients who underwent cystectomy for curative treatment of urothelial bladder carcinoma and who had complete pre and post-operative clinical information – including the ability to calculate pre-operative eGFR values (by MDRD calculation) – were included in this study which resulted in 268 patients for analysis. Lack of muscle invasion on TURBT pathology report or an eGFR of <60 ml/min/1.73m² deemed the patient ineligible for cisplatin based neoadjuvant chemotherapy.

RESULTS

Mean age was 67.9 years, with 29% female, and 13% African American. Mean pre-operative eGFR was 70.4. Out of 268 patients, 149 (56%) were ineligible due to non-muscle invasive disease (70, 26%) or due to renal insufficiency (79, 29%). Out of 198 patients with ≥cT2 disease, 119 (60%) had an eGFR>60 and were thus eligible for platinum-based neoadjuvant chemotherapy -- leaving 40% ineligible due to renal insufficiency. Ineligible patients with >=cT2 had an average eGFR of 45.4 (including one patient with anuric CRF) compared to 82.3 for eligible patients. Of those with >= cT2, Caucasians (vs. African Americans) were more likely to be ineligible (43% vs. 15%; p=0.0087, Fisher’s exact test). When evaluated by gender, females trended more likely to be ineligible than males (48% vs. 36%) although this did not reach statistical significance (p=0.16, Fisher’s exact test). Older patients (>70y) were nearly twice as likely to be ineligible as younger patients (<70y) (53% vs 29%; p=0.0008, Fisher’s exact test).

198 patients with >= cT2 disease, mean eGFR 70.4

119 (60%) patients were eligible for neoadjuvant chemotherapy with an eGFR > 60 (average eGFR 82.3)

79 (40%) patients were ineligible for neoadjuvant chemotherapy with an eGFR < 60 (average eGFR 45.4)

48% of Women ineligible vs. 36% of Men (p = 0.16)
43% Caucasians ineligible vs. 15% African Americans (p = 0.0087)
53% of patients >= 70 ineligible vs. 29% of patients < 70 (p = 0.0008)

CONCLUSION

Our single-institution retrospective study shows that 40% of >= cT2 patients that receive radical cystectomy for muscle invasive disease are ineligible for cisplatin-based neoadjuvant chemotherapy based on their pre-operative renal function and that older patients and Caucasian patients are more likely to be ineligible than their younger and African American counterparts. New non-nephrotoxic neoadjuvant chemotherapeutic regimens are needed to ensure that these patients receive chemotherapy before the progression of any micrometastases past the curable state. Furthermore, in our single-institution cohort a greater percentage of patients were eligible for neo-adjuvant chemotherapy than for adjuvant.

INTRODUCTION

• Recent literature has increasingly shown neoadjuvant chemotherapy to offer superior survival advantage in both urologic and non-urologic malignancies.

• Peri-operative morbidity associated with radical cystectomy ranges from 28% to 64% and in many cases can preclude patients from access to appropriate adjuvant chemotherapy.

• Serum creatinine worsens postoperatively secondary to reabsorption and perioperative morbidity

REFERENCES