

Prevalence and type of malignant tumors in the Norwegian cohort of renal transplant recipients

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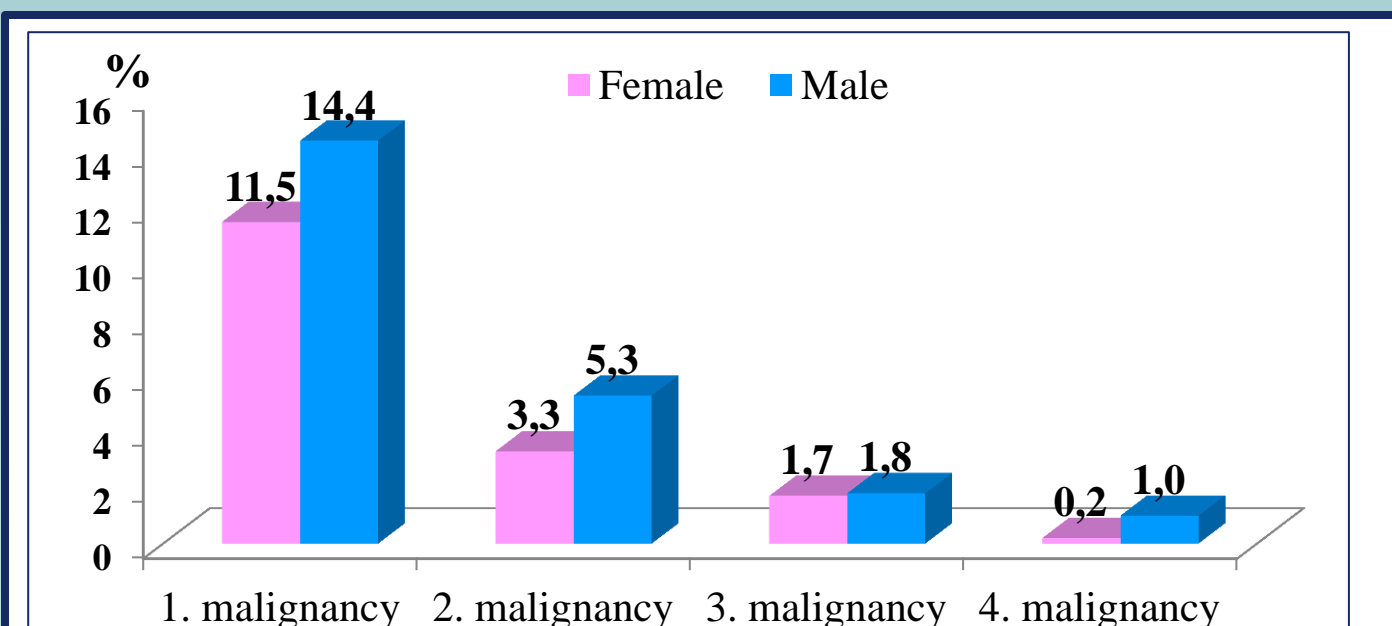
INTRODUCTION

Malignancy is increasingly recognized as a major complication after transplantation. Malignancies are the second most likely cause of death with a functioning graft. Occurrence of malignancy is 3-5 fold higher in renal transplant recipients compared to the general population (1,2). Immunosuppression is the main risk factor. Virally induced malignancies have the most increased incidence such as lymphoproliferative disorder (PTLD) and squamous cell carcinoma (lip, cervix, vulva, skin). However both frequency and death due to malignancy varies between different populations. The use of more potent immunosuppressive medications and newer agents like mTOR- inhibitors could change the future epidemiology of malignancy in the transplant population.

OBJECTIVES

The aim of this study was to assess the occurrence and type of malignant tumors in the Norwegian cohort of renal transplant recipients during a 15 years period (1994-2009).

Figure 1) Occurrence of malignancy by gender

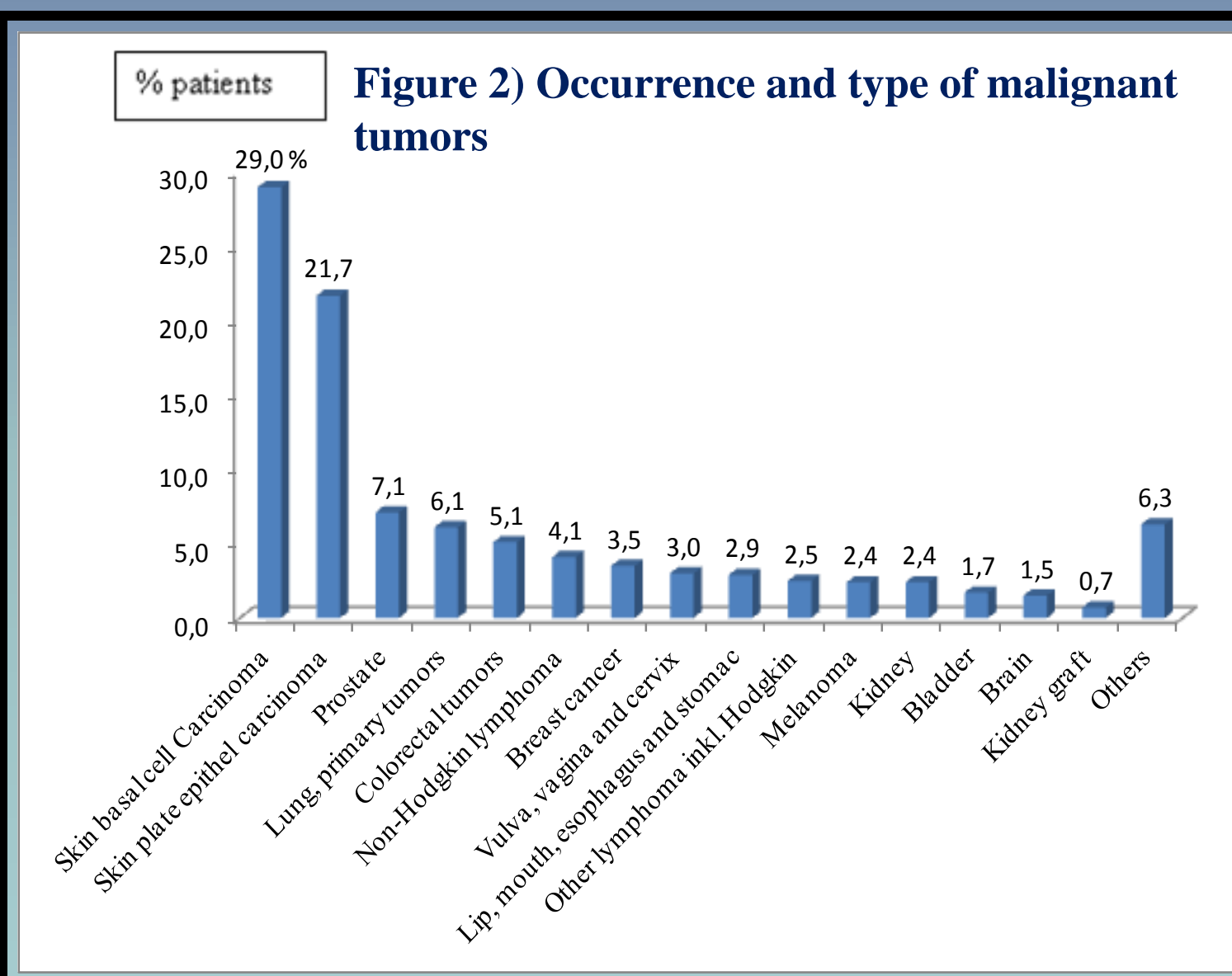


METHODS

This study is based on data from the Norwegian Renal Registry. Organ transplantation in Norway is organized at a single transplant centre at the University Hospital of Oslo. Transplant patients are cared for by local nephrologists for life-time management and follow-up. All nephrologists supplies yearly the Norwegian Renal Registry with information on patients demographic, concomitant medications, renal function, and important post transplant complications as diabetes, cardiovascular events and occurrence of malignancy. All patients are closely followed up and traditionally there are no patients lost to follow up in Norway.

RESULTS

All 3059 transplanted patients were included in this 15 years of follow-up analysis; 1020 females (33.3%) and 2039 males (66.7%) with mean age 49.4 (16.7 SD) and 51.7 (16.5 SD) respectively. Malignancy occurred in 13.4% of patients who experienced malignancy once, 142 (4.6%) twice, 54 (1.5%) third and 23 (0.2%) patients experienced malignancy four times. Mean time to experience first malignancy was 4.8 (3.2 SD) years without difference between males and females. Malignancy occurs more frequent in males compared to females, however males were 6.2 years older compared to females at the time of first transplantation. Skin cancer alone accounts for 50% of all malignant tumors followed by prostatic cancer 7.1%, primary lung tumor 6.1%, colorectal cancer 5.1% and Non-Hodgkin lymphoma 4.1% as the fifth most frequent type of malignancy. Breast cancer and malignancy in the female external genital system accounts for 3.5 and 3% of the malignant tumors respectively.



CONCLUSION

Malignancy occurs in 13.4% of the Norwegian cohort of renal transplant recipients. Skin cancer is the most frequent cancer followed by prostatic, primary lung tumor, colorectal cancers and Non-Hodgkin lymphoma. It remains to assess how use of more potent and newer immunosuppressive agents like mTOR inhibitors will change the future epidemiology of malignancy in this population.

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