Cancer, Inflammatory Bowel Disease and Immunosuppression: A Decade of Experience at an Irish Tertiary Referral Centre

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Introduction, Aims & Methods

As demographics age, gastroenterologists increasingly immunosuppress inflammatory bowel disease (IBD) patients with histories of cancer and increasingly contend with development of cancers in those already so immunosuppressed.

We aimed to compare our practice to standards suggested by Sebastian & Neilaj in a 2019 article published in *Therapeutic Advances in Gastroenterology*.

A search for attendances coded as RETURN-IBD to a dedicated IBD clinic over the 8 year period 1/10/2012 to 31/12/2020 yielded a set of 2,033 patients, the majority of whom (c. 85%) received IBD diagnoses.

A letters search yielded a subset of 78 with a history of cancer and IBD. 7 had a history of two malignancies.
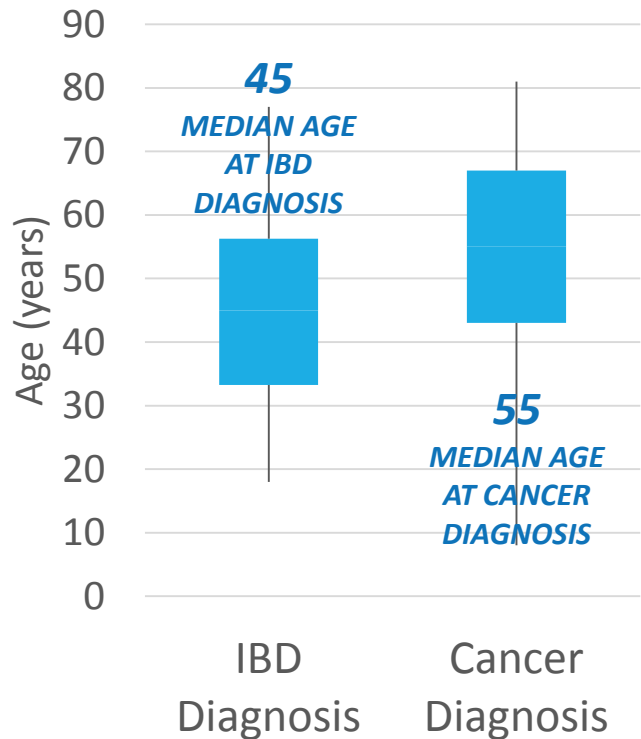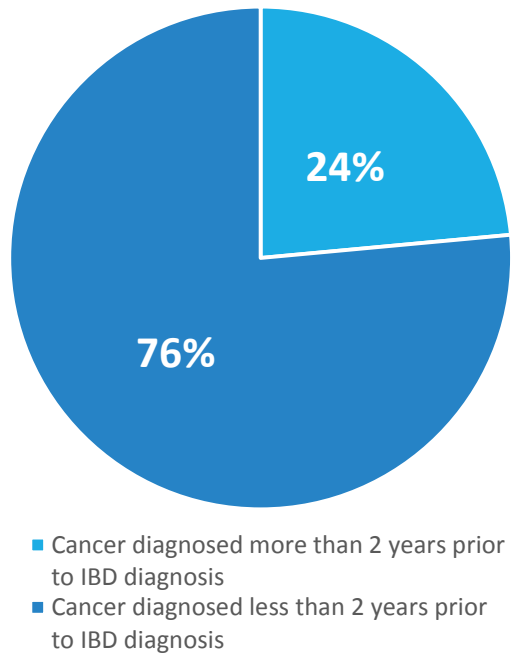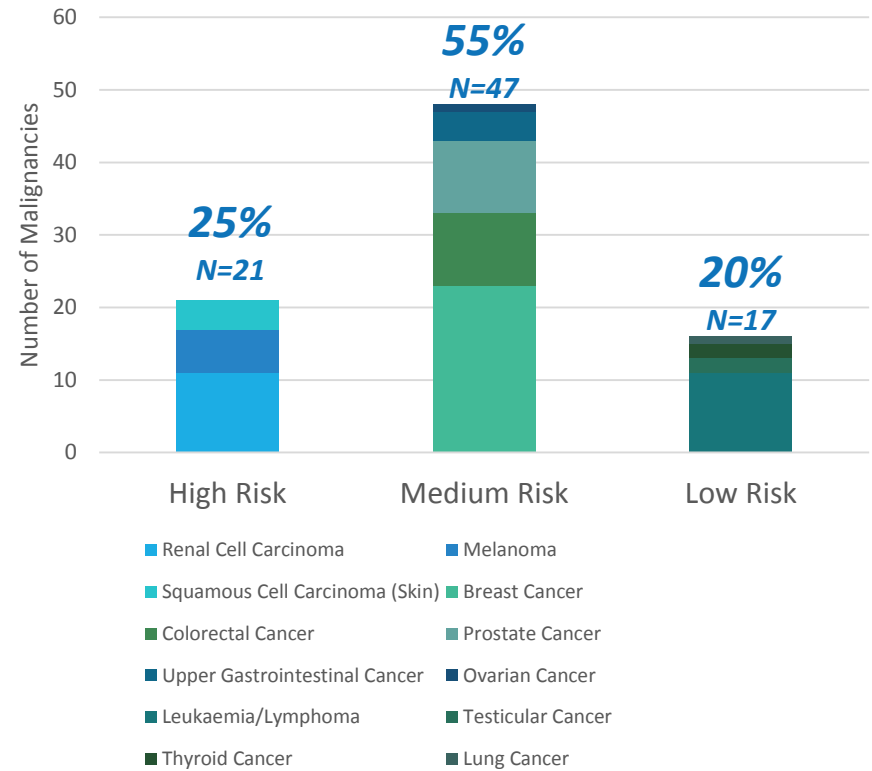
2,033
RETURN-IBD

78
RETURN-IBD
with
malignancy

Results

Box Plot of Ages at IBD and Cancer Diagnosis

45
MEDIAN AGE AT IBD DIAGNOSIS

55
MEDIAN AGE AT CANCER DIAGNOSIS

Age (years)

IBD Diagnosis

Cancer Diagnosis

Temporal Relationship Between IBD and Cancer Diagnosis

24%

76%

■ Cancer diagnosed more than 2 years prior to IBD diagnosis
■ Cancer diagnosed less than 2 years prior to IBD diagnosis

Malignancies by Risk of Recurrence

Number of Malignancies

55%
N=47

25%
N=21

20%
N=17

High Risk   Medium Risk   Low Risk

■ Renal Cell Carcinoma   ■ Melanoma
■ Squamous Cell Carcinoma (Skin) ■ Breast Cancer
■ Colorectal Cancer   ■ Prostate Cancer
■ Upper Gastrointestinal Cancer ■ Ovarian Cancer
■ Leukaemia/Lymphoma   ■ Testicular Cancer
■ Thyroid Cancer   ■ Lung Cancer

Results & Conclusion

24% of malignancies were diagnosed in excess of two years prior to IBD diagnosis (n=20) and in no case altered IBD therapy.

9% never required any medication to treat their IBD (n=7) and 38% never required therapy in excess of ASAs (n=30).

Diagnosis of cancer precipitated a cessation of therapy in 20% and a switch to vedolizumab in 12% of cases (n= 17, 10).

Estimation of a probit binary regression model (after exclusion of the first two perfect predictors) failed to establish a significant relationship between cancer recurrence risk, gender, age or IBD type and alteration of IBD therapy as a result of a cancer diagnosis.

IBD patients diagnosed with cancer requiring immunosuppression have had typical therapy stopped and have been switched to vedolizumab where necessary.

Remote diagnoses had a lesser impact on therapeutic choice consistent with comparable standards.

Dependent Variable: IMPACT_OF_CANCER_ON_IBD_THERAPY
Method: ML - Binary Probit (Newton-Raphson / Marquardt steps)
Date: 04/28/21   Time: 20:49
Sample: 1 33
Included observations: 33
Convergence achieved after 4 iterations
Coefficient covariance computed using observed Hessian

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	2.414242	1.416111	1.704840	0.0882
AGE_AT_CANCER_ONE_DIAGNOSIS	-0.024961	0.018597	-1.342169	0.1795
CANCER_ONE_MEDIUM_RECURRENC...	-0.662649	0.904795	-0.732374	0.4639
MALE	-0.446245	0.508842	-0.876982	0.3805
CD	0.385890	0.542096	0.711847	0.4766
CANCER_ONE_HIGH_RECURRENCE_R...	-0.983268	0.956272	-1.028230	0.3038

McFadden R-squared	0.108431	Mean dependent var		0.636364
S.D. dependent var	0.488504	S.E. of regression		0.498870
Akaike info criterion	1.532451	Sum squared resid		6.719521
Schwarz criterion	1.804544	Log likelihood		-19.28545
Hannan-Quinn criter.	1.624002	Deviance		38.57089
Restr. deviance	43.26180	Restr. log likelihood		-21.63090
LR statistic	4.690907	Avg. log likelihood		-0.584407
Prob(LR statistic)	0.454754			

Obs with Dep=0	12	Total obs		33
Obs with Dep=1	21			

References

Sebastian, S. and Neilaj, S. (2019) 'Practical guidance for the management of inflammatory bowel disease in patients with cancer. Which treatment?', Ther Adv Gastroenterol, vol. 12, pp. 1-15.

Penn, I. (2000) 'Cancers in renal transplant recipients', *Adv Ren Replace Ther,* vol. 7, pp. 147-156.

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