

**129P** Prevalence of vitamin D deficiency in Chinese patients with early stage colorectal cancerD. Ng<sup>1</sup>, R. Tan<sup>2</sup>, R. Sultana<sup>3</sup>, M. Ang<sup>2</sup>, W. Lim<sup>2</sup>, D. Chong<sup>2</sup>, C. Cwl<sup>2</sup>, S-L. Koo<sup>4</sup>, S. Seet<sup>5</sup>, Z. Tan<sup>6</sup>, I.B. Tan<sup>2</sup><sup>1</sup>Department of Internal Medicine, Yong Loo Lin School of Medicine, Singapore,<sup>2</sup>Department of Medical Oncology, National Cancer Centre Singapore, Singapore,<sup>3</sup>Centre for Quantitative Medicine, Duke-NUS Medical School, Singapore, <sup>4</sup>MedicalOncology, National Cancer Centre Singapore, Singapore, <sup>5</sup>Division of Neurology,National University Health System Singapore, Singapore, <sup>6</sup>Department of

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**Background:** Limited data is available on the association between Vitamin D (vD) levels and outcomes in patients with colorectal cancer in Asians. This study aims to investigate the prevalence of vD deficiency in Stage II and III Chinese colorectal cancer patients in Singapore and their prognostic implications.

**Methods:** We prospectively included colorectal cancer patients who underwent adjuvant chemotherapy at the National Cancer Centre, Singapore. Plasma 25-hydroxyvitamin D levels were measured before adjuvant chemotherapy using a Roche E411 analyzer. Information on demographic, risk factors, lifestyle and dietary characteristics of recruited patients were collected using an abbreviated food and exercise frequency questionnaire and verified against their medical records. Plasma vD levels were categorized as deficient (<20ng/ml), insufficient (21-30ng/ml) and sufficient (>30ng/ml). Study variables were compared with vD categories. Kaplan-Meier plots and Cox proportional hazard regression models were used to examine the associations between vD categories, progression-free survival (PFS) and overall survival (OS).

**Results:** Fifty-six patients (mean age 62 years; 61.0% men) with Stage II to III colorectal cancer were recruited; 48.0% were categorized as deficient, 37.5% were insufficient and 14.5% were sufficient in vD levels. Median time from surgery to blood sampling was 17 days (interquartile range [IQR], 4 to 20 days). Differences in tumour characteristics, time from surgery to sampling, self-reported vD intake, time spent outdoors or body mass index were not significantly associated with vD categories. Lower red meat intake was associated with Vitamin D deficiency ( $p = 0.007$ ). Median follow was 22 months (IQR 17 to 28 months). Hazard ratios (HR) were 1.43 (0.16, 12.92) and 2.89 (0.35, 24.16) for deficient and insufficient group respectively for PFS ( $p = 0.42$ ) with respect to sufficient vD group. Similarly, HRs were 0.12 (0.01, 1.52) and 0.30 (0.04, 2.44) for insufficient and deficient group respectively for OS ( $p = 0.25$ ).

**Table: 129P Plasma vitamin D concentration in early-stage colorectal cancers**

	Tertile 1 ( <21ng/ mL)	Tertile 2 ( 21 - 30 ng/ mL)	Tertile 3 ( >30 ng/ mL)	p-value
No. of Patients, (%)	27 (48.0)	21 (37.5)	8 (14.5)	
Age, mean (years)	62	61.3	64.25	0.746
Gender				
Male	13	8	1	0.191
Female	14	13	7	
Vitamin D Intake, (IU/day)	721.1	214.2	432.9	0.581
Supplements, yes	5	2	1	
Alcohol, (g/day)	1.9	1.1	0.3	0.638
Red meat, portions/day	0.4	0.7	1.0	0.007
Positive family history of CRC	4	5	2	
Smoking pack-years	8.5	7.0	11.1	0.827
Tumour genetics MSI-H KRAS mutant BRAF mutant	1 4 0	0 5 1	1 1 1	0.144 0.640 0.889
Tumour side Left Right Transverse	20 2 5	17 2 2	7 1 0	0.683
Hours spent outdoors, (hours)	12.3	10.0	18.1	0.102
Godin Score <sup>†</sup>	19.3	17.0	26.6	0.389
BMI	24.4	22.8	21.3	0.188
Stage at diagnosis II III	6 21	3 18	3 5	0.392

Abbreviations: ng/mL, nanograms per milliliter; IU/day, international units per day; MSI-H, microsatellite instability high; BMI, body mass index <sup>†</sup>: This score was calculated using the Godin Leisure-Time Exercise Questionnaire which is a four-item query of usual leisure-time exercise habits.

**Conclusions:** A majority of patients with colorectal cancer in Singapore had suboptimal levels of vitamin D. The prognostic implications of these findings should be verified in a larger cohort with a longer duration of follow-up.

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