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### Clinicopathological study of coagulation profile in non-haematological malignancies

**Aim:** To study various coagulation parameters and their implications in non- haematological malignancies.

**Materials & Methods:** This is a 3-year retrospective study conducted in the Clinical lab of Kasturba Hospital, Manipal. 250 cases of non -haematological malignancies were included in the study and their coagulation parameters were evaluated. The malignancies included were breast carcinoma, cervix carcinoma, lung carcinoma, ovarian carcinoma, thyroid carcinoma and gastrointestinal carcinoma i.e. oesophageal cancer, gastric cancer, colon cancer and rectal cancer. The following coagulation parameters (BT, PT, APTT, Fibrinogen assay, D-Dimer and Platelet count) were evaluated.

**Results:** Mean age for all cases was  $54 \pm 14$  years and M:F ratio was 1:1.6. 57% cases showed normal coagulation profile whereas 30% & 13% cases showed laboratory evidence of hypercoagulability (increased platelet count, decreased PT/APTT & positive D-dimer) and hypocoagulability (decreased platelet count & increased PT/APTT) respectively. Hypercoagulable state was mainly seen in ovarian carcinoma (48%) followed by breast cancer and cervical malignancy i.e. 36 and 30 % respectively whereas laboratory evidence of hypocoagulability was predominantly associated with GIT malignancy (28%). No significant correlation was seen between the coagulation parameters and the histologic type of the malignancy. BT was normal in all cases. D-dimer was increased in one case of breast and GIT carcinoma each. Fibrinogen assay was done in only 2 cases and was normal in both. Only 7 out of 250 cases presented with clinical evidence of deep vein thrombosis in which 3 were breast carcinoma, 3 were GIT carcinoma and 1 was ovarian carcinoma and all cases were adenocarcinoma histologically. Coagulation parameters was normal in all the 7 cases except 1 case showed prolonged PT and one case showed thrombocytosis and positive D- dimer. On follow up it was seen that around 16-21% of patients with normal PT/APTT before treatment had deranged PT/ APTT after treatment and this shift was not related to mode of treatment received. Thrombocytopenia was a predominant finding in chemotherapy received patients.

**Conclusion:** There is significant association of coagulation disorders with non-haematological malignancies but basic coagulation parameters like platelet count and PT/APTT may not be sufficient to predict the thrombotic episode in these patients hence these tests can be used as screening tools. Specific tests such as fibrinogen assay, FDP, protein C, protein S levels and antithrombin IIIa assay should be included in the evaluation when screening tests suggest coagulation disorders.

### Biography

Sushma Belurkar completed MBBS and MD Pathology from Goa Medical College in the year 1998 and 2002 respectively. She then worked as an Assistant Lecturer of Pathology at Goa Medical College for one year and eight months. Presently, she is working as an Associate Professor of Pathology at Kasturba Medical College, Manipal. She has around 31 publications in national and international journals.

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