and DVT (2.8
toms at initial diagnosis of (m)PAC reported by treating physicians varied between
Relative differences (highest versus lowest) were greatest for depression (8.9
Spain_14.3% versus UK_1.6%), steatorrhea (4.4
German_68.7% versus France_50.4%). Relative differences of
Absolute differences between countries (highest versus lowest) were

greatest for nausea (11.1%_Italy). Absolute differences of

countries (highest versus lowest) were

body/body/body

D elisi 1, B Westphalen2,
3, A Carrato4, J Taieb5, G Prager6, T Macarulla

Gemcitabine induced hemolytic uremic syndrome: Underestimated?

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E Una Cidon1, P Alonso2
1Oncology Department, Royal Bournemouth Hospital, NHS Foundation Trust, Bournemouth, UK, 2Clinical University Hospital, Valladolid, Spain

Introduction: Thrombotic microangiopathy (TMA) is characterized by inflammation of the arterioles and capillaries wall, detachment of endothelial cells, accumulation of proteins, cellular debris and platelet thrombs that occlude the vessels. It mainly affects the kidney. The clinical signs are called hemolytic-uremic syndrome (HUS). This includes non-immune hemolytic anemia, thrombocytopenia and acute kidney injury. Gemcitabine is an antineoplastic agent with many uses in oncology. HUS is an infrequent toxicity although it could be easily underdiagnosed as many cases may go unrecognized due to difficulties in diagnosis. The true incidence is difficult to estimate. It varies from 0.078% in clinical trials to 0.008% in standard practice. However, some authors have documented 2.2%. We carried out a retrospective review to know the
incidence of gemcitabine induced HUS in our population of pancreatic cancer patients receiving adjuvant treatment and to ascertain potential risk factors.

Methods: We reviewed 187 patients on adjuvant gemcitabine for pancreatic carcinoma. We collected data about haemoglobin, platelets, white cells count, creatinine clearance before each cycle. We calculated the maximum drop between baseline and minimum level of haemoglobin and creatinine clearance for all these patients.

Results: We found that two patients developed HUS (1.06%), 185 patients developed a maximum drop in haemoglobin of 22% (18-27%) and around 19% in creatinine clearance (10-45%). The HUS patients had a drop in haemoglobin of 37% and 34% and a drop in creatinine clearance of 41% and 31%. We carried out a logistic regression analysis. This showed that a drop in haemoglobin >25% and in creatinine clearance >30% from baseline, increased significantly the chances of developing HUS (p 0.0001).

Conclusion: Our data point to a significant drop in hemoglobin and creatinine clearance as two significant risk factors to develop HUS induced by gemcitabine. We recommended that in cases with high index of suspicion, gemcitabine should be stopped or delayed until we receive the results of extra tests such as haptoglobin, lactate dehydrogenase, test de Coombs, to confirm or rule out this diagnosis.