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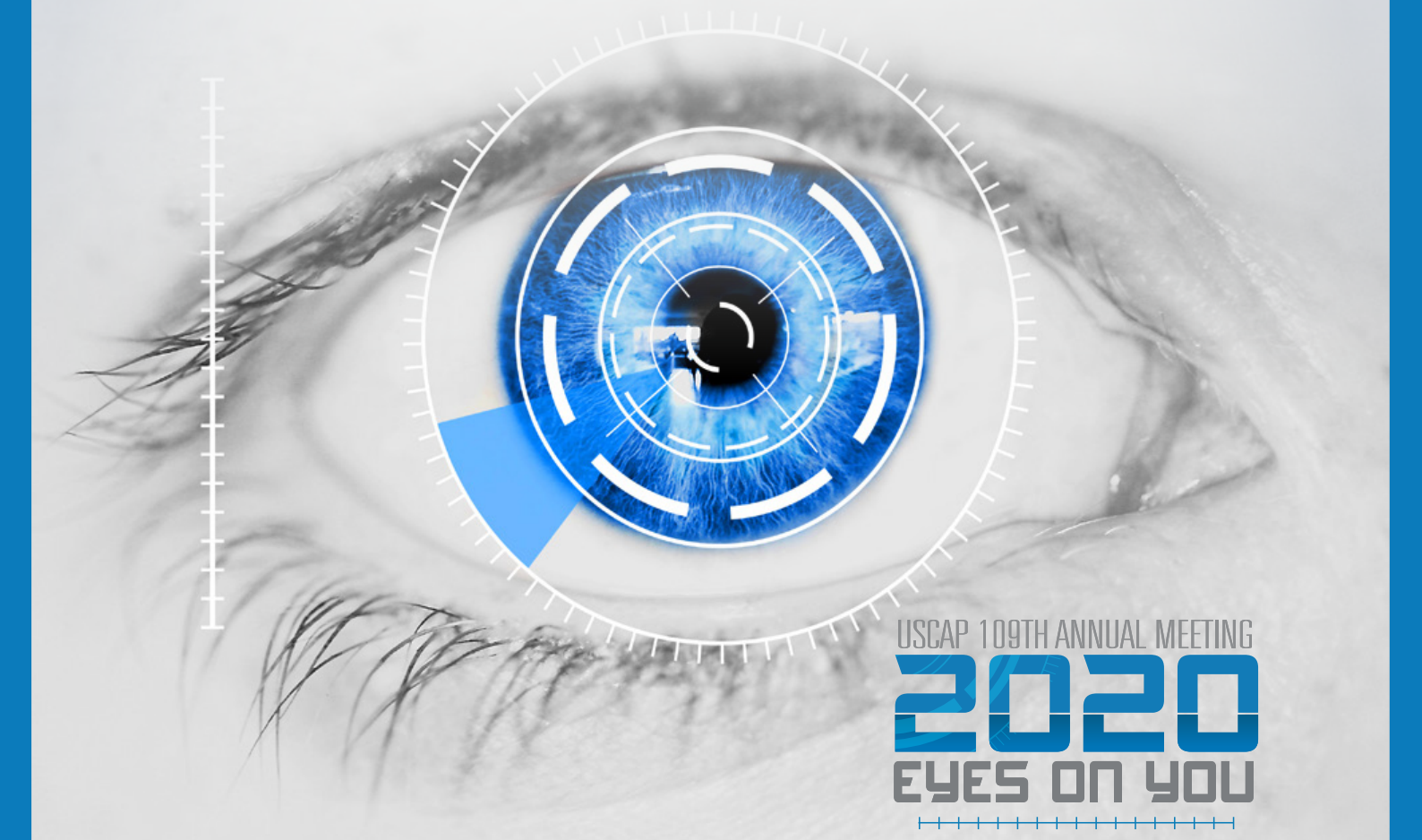
ABSTRACTS

GASTROINTESTINAL PATHOLOGY (612-832)



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mainly facilitated via apoptosis induction. Regarding the expression of different senescence markers, a low (<0,1), as well as an extremely high (>0.6) ratio of senescent cells are associated with a decreased OS and PFS. Proximity analysis of senescent cells and CD8+ cells allows a better discrimination regarding OS than evaluating CD8-status only.

Conclusions: Senescence-associated molecules have significant prognostic value in CRC. Absence as well as high expression of these biomarkers are associated with a poor prognosis. Arresting the cell cycle of impaired cells imposes a barrier on tumorigenesis. However, a high expression of senescence markers within the tumor does not indicate a potent tumor defence due to the importance of an effective immunosurveillance. To reflect this, proximity analyses of these cell populations might be a strong prognostic tool.

672 Pathological and Molecular Features of Mucinous Colorectal Adenocarcinoma

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Disclosures: Roberta Gafa': None; Giulia Galli: None; Iva Maestri: None; Lanza Giovanni: None

Background: Mucinous carcinomas (MC) account for 10-15% of colorectal carcinomas (CRC) and are considered aggressive tumors. They differ from conventional adenocarcinoma for many clinico-pathologic and molecular characteristics with implications on patient management and prognosis. Aim of the study was to compare clinical, pathological and biologic features of MC (mucin >50%) with those of conventional adenocarcinomas (AD) and of adenocarcinomas with <50% of mucin (AD-MC).

Design: The study included 1675 patients with CRC surgically resected between 2004 and 2018. Mismatch repair status (MMR) was determined in 1422 cases by immunohistochemical analysis of MLH1, MSH2, MSH6 and PMS2 expression and/or by microsatellite instability analysis using a fluorescent PCR method. Tumors with loss of MMR protein expression and/or MSI-H were classified as MMR-deficient (MMR-D) and tumors with retained MMR proteins expression and/or MSS/MSI-L as MMR-proficient (MMR-P). KRAS exon 2 and BRAF-V600E mutation were investigated by direct DNA sequencing or RT-PCR in 630 cases.

Results: Of the 1675 tumors, 1123 (67%) were classified as AD, 352 (21%) as AD-MC and 200 (12%) as MC. Comparing the three groups, MC and AD-MC occurred more frequently in the proximal colon ($p<0.001$) and more often demonstrated poor differentiation. No other significative differences were found concerning the other clinical and pathological variables examined. MC (37%) and AD-MC (34%) were more frequently MMR-D ($p<0.001$) than AD (6%). MC (36%) and AD-MC (41%) were also more often BRAF mutated than AD (12%). KRAS mutations were detected at a higher rate in AD and MC with respect to AD-MC ($p=0.01$). As a whole the proportion of KRASwt/BRAFwt AD (45%) was higher with respect to AD-MC (22%) and MC (18%). The strong association between BRAF mutation and tumor type was also observed in the group of MMR-P carcinomas.

Conclusions: MC represent a distinct but heterogeneous group of CRC, characterized by specific molecular features such as MMR deficit and BRAF mutation. Interestingly, AD-MC display a genetic pattern of alterations similar to MC, suggesting that these tumors should be classified separately from conventional adenocarcinomas.

673 High Body Mass Index (BMI) Directly Correlates with High Tumor Budding and More Aggressive Tumor Biology in Kentuckians with Colon Adenocarcinoma

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Background: Kentucky ranks 1st in the U.S. in colorectal cancer (CRC) incidence with particularly high rates in Appalachian Kentucky where obesity is also prevalent. Obesity has not only been recognized as a risk factor for CRC, but it has also been associated with reduced survival compared to normal weight CRC patients. An emerging histologic criterion that portends a more aggressive tumor biology and worse outcome in patients with CRC is high number of tumor buds at the invasive edge. The relationship between the BMI as an indicator for obesity and tumor budding as a marker for a more aggressive behavior in CRC has not been studied.

Design: Kentucky CRC specimens (Stages I-III) from 2008-2014 were scored by two pathologists for tumor budding, poorly differentiated tumor clusters, lymph node metastasis, and inflammation. Data was subsequently correlated with stage, patient location, and body mass index (BMI) using the Kentucky Cancer Registry and SEER registry.

Results: We reviewed 174 specimens stratified by stage: I (30%), II (37%), III (33%); and geography: Appalachian (55%) and non-Appalachian (45%). Of these, 50% had low (<5 buds), 18% had intermediate (5-9) and 32% had high (>10)tumor budding. High tumor