Findings: Urine survivin expression detected bladder cancer with higher sensitivity (85.25%, 95% CI 73.8–93.0%) and specificity (100.00%, 90.4–100.0%) than urine cytology, which showed 52.29% sensitivity (42.5–61.9%) and 87.88% specificity (77.5–94.6%). In the 62 treated patients, urine survivin expression had 22.92% sensitivity (12.0–37.3%) and 92.86% specificity (66.1–98.8%) for detecting bladder cancer. Surprisingly, among the 62 treated patients, 13 (21%) showed survivin expression. Follow-up of these patients for 1 year revealed recurrence of TCC in nine patients (69%).

Interpretation: This study shows the clinical utility of survivin expression in new or recurrent bladder cancer, and in patients with a negative biopsy receiving follow-up care. Thus, highly sensitive and specific determination of survivin in exfoliated cells in urine, by use of qRT-PCR, seems to provide a simple, non-invasive diagnostic biomarker for routine screening of bladder cancer.

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OP11 PROGNOSTIC SIGNIFICANCE OF F-18 FDG-PET/CT IMAGES IN CURATIVELY RESECTED GASTRIC CANCER

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Background: The role of F-18 FDG-PET/CT in gastric cancer is limited in some cases by gastric histology. This retrospective study was designed to assess the accuracy of F-18 FDG-PET/CT for imaging stomach cancer, and its correlation with other clinicopathological findings, including its role as a prognostic factor.

Methods: 431 patients who underwent F-18 FDG-PET/CT before surgery for gastric cancer were included in this study, from December, 2006, to May, 2010. The mean age was 62 years (SD 11.6) and the male-to-female ratio was 265:167. Patients were divided into three groups according to the maximal standardised uptake value (SUVmax) of the tumour. All patients' medical records were reviewed, including surgical and pathological results. All parameters were compared by one-way ANOVA and χ^2-test. Survival curves were calculated using the Kaplan–Meier method, and the statistical difference in prognosis was analysed using a generalised log-rank test.

Findings The mean tumour SUVmax was 6.51 in surgically treated stomach cancer. Group 1 included 175 patients with SUVmax of 0, group 2 was 124 patients with SUVmax lower than 5, and group 3 was 133 patients with SUVmax $\geqslant 5$. The intensity of FDG uptake correlated with tumour size ($r^2 = 0.103$, $p < 0.001$), and showed significant difference according to TNM stage, tumour grade, lymphovascular invasion, nerve invasion, and sex. SUVmax was higher in poorly differentiated tumours and in men. Apart from SUVmax, all of the pathological parameters, including TNM stage, tumour grade, lymphovascular invasion, and nerve invasion, were not associated with median survival.

Interpretation: The SUVmax of F-18 FDG-PET/CT of surgically treated gastric cancer correlated with TNM stage, tumour grade, lymphovascular invasion, nerve invasion, and sex. SUVmax also correlated with median survival.

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OP12 XPD/ERCC2 CODON 751 AND XRCC1 CODON 280 POLYMORPHISMS AND THE RISK OF NASOPHARYNGEAL CARCINOMA IN MALAYSIA

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Background: According to the Malaysian National Cancer Registry, nasopharyngeal carcinoma (NPC) was the third most common cancer among men in peninsular Malaysia in 2006. Variations in specific DNA repair genes alter individual cancer risk, and the DNA repair system has a crucial role in maintaining the integrity of the human genome. Xeroderma pigmentosum complementation group D (XPD)/excision repair cross-complementing group 2 (ERCC2) encodes a helicase that participates in nucleotide excision repair. This variant allele of polymorphism XPD Lys751Gln has been associated with increased DNA adduct levels, and with low DNA repair capacity. Another gene, the X-ray cross complementing group 1 (XRCC1) encodes a protein involved in the base-excision repair pathway. Arg280His is located in the nuclear antigen-binding region of proliferating cells. Reports suggest that an Arg280His variant protein is defective in localisation of damaged sites in the chromosome, thereby reducing the efficiency of base excision repair. In this study, we investigated the possible association of these two polymorphisms with an increased risk of developing NPC in the Malaysian population.

Methods: A molecular epidemiological study was done using a hospital-based case-control study design. A total of 113 cases and 130 controls were available for study, matched for age, sex, and ethnicity. Single nucleotide polymorphism (SNP) genotyping was carried out using a PCR-restriction fragment length polymorphism (RFLP) method.

Findings: A total of 113 cases and 130 controls were analysed. The frequency of the XPD codon 751 homozygous wild-type Lys/Lys genotype was 87.6% (99/113) in cases and 73.9% (96/130) in controls; the heterozygous Lys/Gln genotype was 12.4% (14/113) in cases and 25.4% (33/130) in controls; and the Gln/Gln genotype was 0% (0/113) in cases and 0.7% (1/130) in controls. For XPD/ERCC2 codon 751, an odds ratio (OR) of 2.41 was observed (95% CI 1.17– 4.97, $p = 0.017$). Risk of NPC was nearly two and a half times higher for individuals with the homozygous wild-type Lys/Lys grenotype than for the heterozygous Lys/Gln genotype, adjusted for age, sex, and ethnicity. To our knowledge, there have

been no documented reports of the association between XPD-Lys751Gln and nasopharyngeal carcinoma risk until now. The frequency of the XRCC1 codon 280 homozygous wild-type Arg/Arg genotype was 77.9% (88/113) in cases and 80.8% (105/130) in controls; the heterozygous Arg/His genotype was 21.3% (24/113) in cases and 18.5% (24/130) in controls; and the His/His genotype was 0.8% (1/113) in cases and 0.7% (1/130) in controls. For XRCC1 codon 280 polymorphisms, no significant association between Arg280His and risk of NPC was found (OR 1.30, 95% CI 0.66–2.57; $p = 0.447$).

Interpretation: Risk of NPC was nearly two and a half times higher for individuals with the homozygous wild-type Lys/Lys genotype than for the heterozygous Lys/Gln genotype, adjusted for age, sex, and ethnicity. To our knowledge, there have been no documented reports of the association between XPDLys751Gln and nasopharyngeal carcinoma risk until now.

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OP13 NIMOTUZUMAB COMBINED WITH RADIOTHERAPY FOR OESOPHAGEAL CARCINOMA – A PHASE 2 CLINICAL TRIAL

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Background: We evaluated the safety and efficacy of nimotuzumab in combination with radiotherapy for oesophageal carcinoma (ESO).

Methods: 42 patients with stage II–IVa ESO were randomly assigned as part of this prospective, phase 2 trial, from November, 2008, to July, 2010. All patients received 50–70 Gy three-dimensional conformal radiotherapy. 200 mg of nimotuzumab was administered via intravenous infusion once a week during radiotherapy.

Findings: Primary cancer lesions were located in the upper, middle, and lower thoracic segments of the oesophagus in 10, 26, and 3 patients, respectively. Nine patients had stage II ESO, 25 had stage III, and eight had stage IVa. All patients received 50–70 Gy of radiation and 37 patients (88.1%) received nimotuzumab more than five times. Grade 3 toxicities were nausea and vomiting ($n = 1$), oesophagitis ($n = 3$), skin reactions ($n = 4$), and haematological toxicity ($n = 1$). One patient had an allergic reaction to nimotuzumab. Four patients (9.5%) had a complete response, 21 (50%) had a partial response, two (4.8%) had stable disease, and 15 (35.7%) had progressive disease. The overall disease control rate was 64.3%. With a median follow-up of 6 months, local recurrence was observed in six patients (14.3%) and distance metastasis in ten (23.8%). Ten patients died, with eight possible cancer-related deaths. The median survival time has not yet been reached. 6-month and 1-year overall survival rates were 82.4% and 57.8%.

Interpretation: Nimotuzumab in combination with radiotherapy is well tolerated and effective for treatment of ESO. Long-term toxicity and long-term efficacy require further evaluation.

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P14 SCREENING FOR GASTRIC-CANCER MICROMETASTASES IN A SINGLE SENTINEL LYMPH NODE WITH REAL-TIME PCR – A PRELIMINARY STUDY WITH THE MARUYAMA COMPUTER SIMULATION

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Background: Sentinel lymph node (SLN) mapping has recently been introduced in the treatment of gastric cancer. Although immunohistochemistry and conventional real-time PCR (RT-qPCR) provide reliable information about micrometastases in SLNs, they cannot examine large numbers of lymph nodes in a short time, making them unfeasible for intraoperative use. The SLN is defined as the first node to receive cancer-cell drainage from the primary tumour, therefore micrometastases or isolated tumour cells should first develop in these nodes. In this preliminary study, we evaluated the concept of single SLN screenings for micrometastases by use of the Maruyama computer program.

Methods: 23 patients were enrolled in our study: nine patients were included in the control group and 14 in the study group. The first stained lymph node was analysed with RT-qPCR for carcinoembryonic antigen and CK-20 expression, as markers for micrometastases. Patients' characteristics were retrospectively used as predictors in the Maruyama computer program, to determine the most likely metastatic site. Results were compared with the actual staining patterns, and correlations between tumour characteristics and micrometastases were examined.

Findings: 14 patients were found to be N0. Micrometastases were detected in four patients (28.6%). In 76.9% of cases, extracted SLNs coincided with lymph nodes predicted by the computer program to be the most likely metastatic site. Micrometastases were more common in Maruyama-predicted lymph nodes. Lauren's histological type distribution, preoperative CA 19-9 values, and age distribution differed significantly between patients who were positive and negative for micrometastases.

Interpretation: These results indicate the potential use of a single SLN for intraoperative decision making; however, sensitivity and specificity need to be evaluated in a larger series, supported by long-term recurrence and survival results.