In this issue

Interfering in ovarian cancer

Interferon-γ (IFN-γ) inhibits tumour growth by activating apoptosis. During this process, the cytokine induces expression of apoptotic-related genes belonging to both the intrinsic and extrinsic pathways. IFN-γ activity is associated with up the regulation and activation of apoptotic caspase proteases, while it also controls Bcl-2 family members to decrease/increase levels of other apoptotic proteins. In addition, IFN-γ stimulates growth arrest as progression of cells through all phases of the cell cycle can be slowed down by its activity. Specifically, human IFN-γ has anti-proliferative effects on ovarian tumour xenografts, ovarian cancer cell lines and tumour cells isolated from ovarian cancer ascites. In this issue of EJC, Barton and colleagues have further characterised the mechanisms underlying the anti-proliferative action of IFN-γ in ovarian cancer cell lines. They have also investigated the molecular events behind the experimental cisplatin/IFN-γ combination that has shown some clinical benefits in treating ovarian cancer patients. The authors show that IFN-γ reduces ovarian tumour cell growth by caspase dependent apoptosis involving both intrinsic and extrinsic pathways. They demonstrate that the two pathways are linked by the IFN-γ regulated, Bcl-2 family apoptotic protein Bid, and together with cisplatin, IFN-γ exerts a more powerful anti-proliferative effect on ovarian cancer cells.

Screening for breast cancer

Germ-line mutations in the tumour suppressor genes *BRCA1* or *BRCA2* predispose women to breast and ovarian cancer. Apart from a family history of these two cancers, other factors indicating higher prevalence of *BRCA* mutations in the population remain uncertain. With increasing emphasis on breast cancer prevention and surveillance from charities and governments, simple and reliable criteria for selecting patients for screening programmes are crucial. In this issue of EJC, Wrlm-Rodenhuis and colleagues have reported the first hospital-based prospective study on the systematic screening of 1000 breast cancer patients for predictive factors associated with *BRCA1*/2 mutations. The authors correlated: breast and ovarian cancer in relatives; age at diagnosis if under 45 years; bi-laterality; multifocality and multicentricity of infiltrating carcinoma; accompanying lobular carcinoma *in situ* and a personal history of ovarian cancer to the probability of having *BRCA* mutations. A family history of ovarian cancer was the only factor significantly associated with the presence of a disease-causing mutation. However more importantly, 57% of mutation carriers had no affected first-degree relatives and 30% had no family history of breast or ovarian cancer. The authors suggest that *BRCA* screening policies based on family histories alone would miss a considerable proportion of women carrying deleterious mutations.

Deadly bugs *vs.* Cancer patient

Bloodstream infections (BI) or bacteremia is a significant cause of morbidity and mortality for patients undergoing chemotherapy. In this issue of EJC, Castagnola and colleagues have evaluated the incidence rate (IR) of BI and invasive mycoses (IM) during chemotherapy in paediatric acute lymphoblastic (ALL) and non-lymphoblastic leukaemias (AnLL). The authors argue that IR (number of episodes per duration of observation) gives a more reliable estimate of infection impact in cancer patients than the analysis of 'percentage of observed events' as reported by others. The current study showed a significant correlation between received chemotherapy intensity and IR. The analysis also confirmed that severe complications from infection were strictly related to leukaemia type as AnLL patients had higher IR than ALL. The authors also note that the rate of IM during anti-leukaemic treatment was lower than for BI and that approximately 80% of severe infections were diagnosed in the presence of neutropenia. Surprisingly, the fatality rates in immunosuppressed children with cancer were lower than those found in otherwise healthy children with community-acquired BI. The accompanying editorial comment by Hughes provides an insight into this apparent paradox and speculates that it may be related to the use of prophalactic antibiotics.

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