55 Use of risk-adapted and response-guided approach in neoadjuvant chemotherapy for locally advanced breast cancer

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Introduction: We have previously presented data regarding the use of neoadjuvant chemotherapy (NAC) to treat locally advanced breast cancer (LABC) in Hong Kong West Cluster. For patients without HER2 gene amplification, NAC consists of standard chemotherapy containing an anthracycline and a taxane usually given sequentially. We hypothasised that high-risk patients with aggressive tumour phenotypes or those who failed to respond to the standard chemotherapy would benefit from a more intense regimen. From 2012 we prospectively recruited such patients undergoing NAC and administered a third-generation regimen containing an anthracycline, taxane, and cyclophosphamide given concurrently with growth factor support.

Method: Before NAC was started, all patients were mandated to have positron emission tomography/computed tomography (CT) or CT with contrast to demonstrate the absence of distant metastasis. Pre-treatment tumour biopsies have immunohistochemistry for ER, PR, HER2 and Ki67 performed by reference labs. Suspicious axillary lymph nodes have fine-needle aspiration performed to assess for metastasis. High risk was defined as either ER/PR+ HER2 –ve and highly proliferative (Ki67 >30% or >10 active mitosis per high-power field) or ER/PR/HER2 –ve (TN); this constituted risk stratification according to tumour biology. The response to tumour was assessed every cycle by the oncologist and assessed by bedside ultrasound every 2 to 4 cycles. For those receiving standard NAC, if there was lack of tumour shrinkage or they show clinical progression, they are offered cross-over to the high-risk regimen at the discretion of the oncologist, with response guided. The chemotherapy was planned for 6 to 8 cycles depending on the tolerability of the patient. After completion of NAC, radiological reassessment to demonstrate clinical disease control was performed. Surgical intervention was delivered according to international guidelines and final pathology was reported according to international standards.

Results: Since 2012, 19 patients were treated according to this protocol; their mean age was 48 years, with 74% pre-menopausal. Of these patients, 84% were intrinsically high risk with the rest being poor responders. The proportion of TN breast cancer was 37%. Disease control rate was 95% and one patient developed clinical progression during NAC. The median cycles of NAC delivered was 6 and there was no treatment-related mortality. Breast conservation was performed in 16% of the patients.

Conclusion: Adapting a risk-stratified and response-guided approach for neoadjuvant therapy can enhance the rate of tumour control and potentially deliver higher breast conservation rate for LABC.

56 Neuroprotection of melatonin against intracerebral haemorrhage–induced injury

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Intracerebral haemorrhage (ICH) is a devastating form of stroke which is characterised by breakdown of blood vessels within the brain parenchyma. ICH has a mortality rate much higher than that of ischaemic stroke and it could lead to poor neurological outcomes including motor deficits and cognitive impairment. At present, the therapeutic options for ICH remain limited. As many studies have shown that the activation of oxidative pathways and inflammatory pathways are the important causes of brain damage after ICH, the present study aimed to investigate whether melatonin—a potent antioxidant and free-radical scavenger with strong anti-inflammatory actions—could provide neuroprotection after ICH. ICH was induced in rats by intrastriatal injection of collagenase type IV. Repetitive melatonin intraperitoneal injections were given to the rats at 2 h, 24 h, and 48 h after ICH, and they were sacrificed at 72 h. The beneficial effects of melatonin on neurological deficits after ICH were assessed by rotarod test and neurological deficit scoring system. Further investigations will be focused on the effectiveness of melatonin in alleviating inflammation after ICH as well as other possible mechanisms.