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K-RAS testing as part of routine care for colorectal cancer patients

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Abstract

Recent clinical evidence strongly suggests that only those colorectal cancer patients with wild type K-ras respond to the anti-EGFR monoclonal antibody, Cetuximab. As such K-ras mutation testing is now a pre-requisite for inclusion in forthcoming CRC clinical trials using Cetuximab and is a requirement for access through the Interim Access Program (IAP) operated by Merck.

SJOG Pathology in West Australia has recently implemented K-ras mutation testing and performed 300 such tests on DNA extracted from fresh frozen material as part of creating a colorectal tissue bank within routine patient management. Approximately 32 % of cases were K-ras mutant. The results have been included in the routine histopathology report. The test is cheap and easy to perform.

At the same time we have established a service for K-ras testing from archival cases using paraffin embedded samples. In contrast to the prospective cases this service has proven difficult to establish due to several reasons, the most important being that accessing archival material is relatively difficult. In addition, jurisdiction over tissue blocks and the time lapsed between the initial surgery and when the test is requested (often some years) creates significant logistical issues for sample retrieval and testing. In addition, a survey we conducted demonstrated a wide range of knowledge about the testing by oncologists and this contributed to delays in obtaining the test results.

Given the increased likelihood of similar tests for other molecular markers (eg. Braf, MSI) and with an ever increasing array of targeted therapies in the pipeline we suggest that routine diagnostic pathology labs should harvest DNA from primary tumours as part of their routine practice. In this manner such tests may be optimally performed whilst at the same time avoiding double handling of samples and so reducing both the cost of and time taken to perform molecular tests.