P253 Economic impact of 21-gene recurrence score testing on early stage breast cancer in Ireland

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Goals: International guidelines recommend chemotherapy (CT) for most patients (pts) with hormone receptor positive (HR+) breast cancer (BC). The **21-gene breast cancer test** is a validated multi-gene diagnostic test that predicts the likelihood of adjuvant chemotherapy benefit in a subset of breast cancer patients. Ireland was the first public health care system to reimburse this test in Europe. Objectives of this study were to analyse both the clinical and economic impact of the 21-gene breast cancer testing on adjuvant treatment decisions since reimbursement, using real-world data. Correlative factors for a low, intermediate and high Recurrence Score (RS) with the 21-gene breast cancer test, were also investigated.

Methods: Between October 2011 and February 2013, a national, retrospective, cross-sectional observational study of HR+ BC pts who were tested with the 21-gene breast cancer test, was conducted in Ireland. A survey of lead breast medical oncologists in Ireland, provided the assumption for the decision impact analysis that grade (G) 1 pts would not have received CT before testing (i.e. negative pre-test CT decision) and G2/3 pts would have received CT before testing (i.e. positive pre-test CT decision). Descriptive statistical analyses were performed. No adjustment was made for multiple testing.

Results: 633 pts were identified including 41 with N1 disease tested as part of the ongoing RxPONDER trial. Mean age was 56 years. Mean tumour size was 1.96?cm. 342 pts (54%) had a low RS, 222 (35.1%) an intermediate RS, 61 (9.6%) a high RS and 8 (1.3%) unknown RS's. Mean age was comparable in all groups. 409 (64.6%) pts had G2 tumours, 135 (21.3%) had G3 tumours and 86 (13.6%) had G1 tumours and 3 (0.5%) had unknown G. Post RS, 361 pts (57%) experienced a change in CT decision, 351 were changed to hormone therapy alone and 10 were advised to receive CT. In total, 196 (30.9%) pts received CT and 3 declined it. Of those pts treated with CT, 27 (13.7%) had low RS, 113 (57.7%) had intermediate RS and 57 (29%) had high RS. The most commonly prescribed regimen was docetaxel and cyclophosphamide (TC), administered in 121 pts (61.7%). The 21-gene RS assay achieved a 55% net reduction in the use of CT. IDC morphology and G3 tumours were associated with a higher probability of a high RS. Analysis restricted to node-negative patients resulted in similar results. Deducting the cost of the assay, reimbursement of the 21-gene test led to net chemotherapy cost savings of €?388,000 from the perspective of the national public payer.

Conclusion: Ireland was the first European public healthcare system to approve reimbursement

for the 21-gene breast cancer testing. In the first 18 months following its reimbursement, this test led to a 55% net reduction in CT use and net savings of just under €?400,000.