

HPV testing compared with routine cytology in cervical screening: long-term follow-up of ARTISTIC RCT

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Plain English summary

ARTISTIC RCT: follow-up

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Plain English summary

Human papillomavirus (HPV) causes cervical cancer. The latest scientific evidence shows that screening for HPV is better than screening for abnormal cytology with a 'smear' test, so HPV testing is being rolled out nationally. The main disadvantage is that more women will test positive and be referred for further tests. Most infections are harmless and clear without treatment, and balance must be achieved so that women who progress to CIN3 (pre-cancer) are identified but that unnecessary referral and anxiety for women is minimised.

A Randomised Trial In Screening To Improve Cytology (ARTISTIC) recruited 24,510 women attending for cervical screening in Greater Manchester in 2001–3. Cervical samples taken at recruitment and again at screening 3 and 6 years later were tested for HPV. The women then returned to routine screening. We have followed them through national screening records and cancer registration until the end of 2015.

By comparing the HPV results taken at entry with those collected 3 years later, we can categorise HPV infections into new and persistent. We have found that the CIN3 risk in women with persistent infections is about six times higher than in women with new infections, which in turn is about 30 times higher than in women with no infection.

About three-quarters of women with HPV infection but no abnormal cells clear their infections within 3 years. Their risk of pre-cancer within 3 years is low (1.5%) and so intensive follow-up is unnecessary. Moreover, 40% of those who remain human papillomavirus positive (HPV+) have cleared their initial infection and acquired a new infection, meaning that they are also at much lower risk of disease than those with a persistent infection. The current practice in the national pilot study of annual repeat testing and referral of anyone who is still HPV+ after 2 years may, therefore, be too conservative.

We have also shown that the CIN3 risk after 10 years in women testing negative for HPV is similar to the risk after about 3 years in women testing negative for cytology. This means that screening intervals could be extended for women testing negative for HPV.

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