

Training the Body to Fight Back: New Treatments for HPV-Related Cervical Cancer

Analucia Ramos Cornejo

Abstract

Cervical cancer is the fourth most frequently diagnosed and fourth most deadly cancer in women globally, despite it being largely preventable due to its strong association with human papillomavirus (HPV) infection. The best treatment depends on how far the cancer has spread. We reviewed 30 recent clinical studies involving surgery, chemotherapy, radiation and immunotherapy, or combinations thereof, to compare benefits vs. side effects of each of these approaches.

16 & 18

are the two HPV strains behind most cervical cancer cases

84%

of cases occur in countries with low human development index

88%

of deaths correspond to these low income countries.

Introduction

Cervical cancer typically develops through a prolonged, multistep process in which precancerous lesions in the cervix progress to invasive carcinoma. It is almost always caused by HPV. Vaccines and screening have cut cases in wealthy countries, but many women elsewhere are still diagnosed late, leading to worse prognoses.

Our question: Which treatment works best at each stage, and at what cost in side effects?

Methods

We performed a systematic search in PubMed for clinical trials and expert reviews from the last five years on HPV-related cervical cancer. Included studies comprised phase II and phase III randomized clinical trials, as well as meta-analyses and high-quality reviews, and were required to report at least one clinically relevant outcome, including overall survival, disease-free survival, progression-free survival, objective response rate, or treatment-related adverse events.

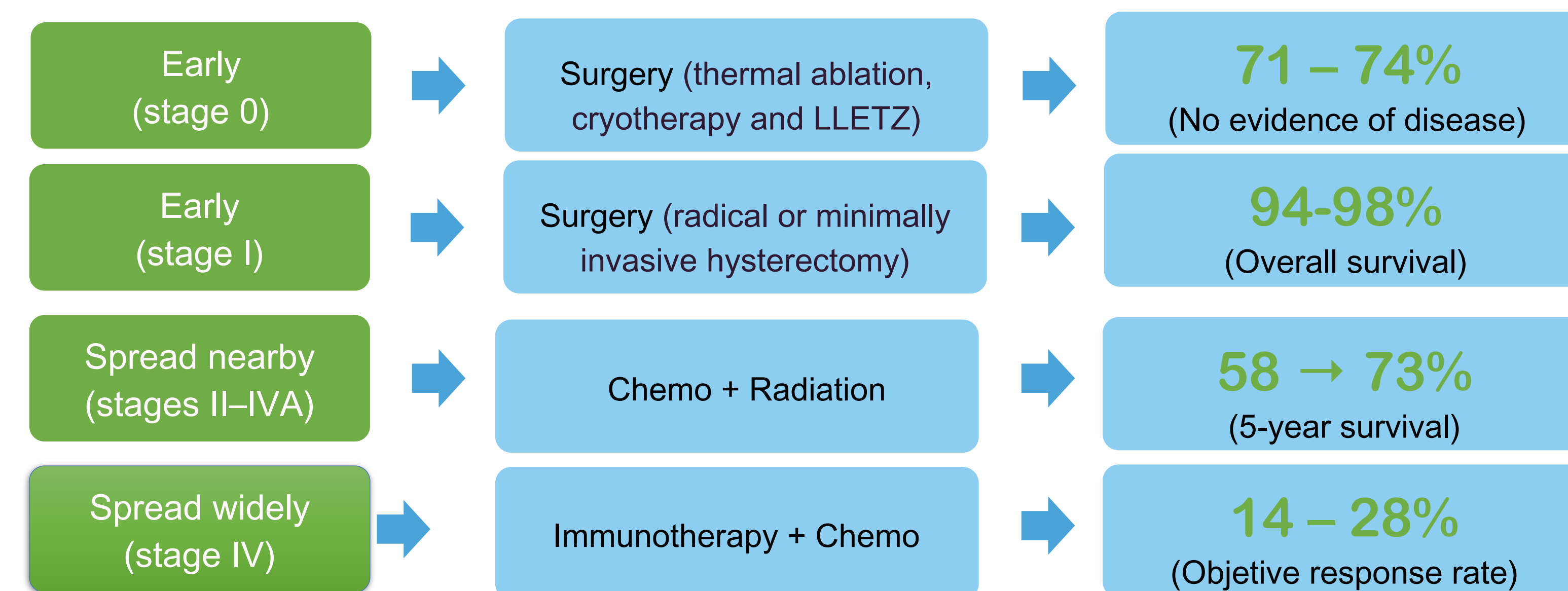
76 studies found

65 after removing repeats

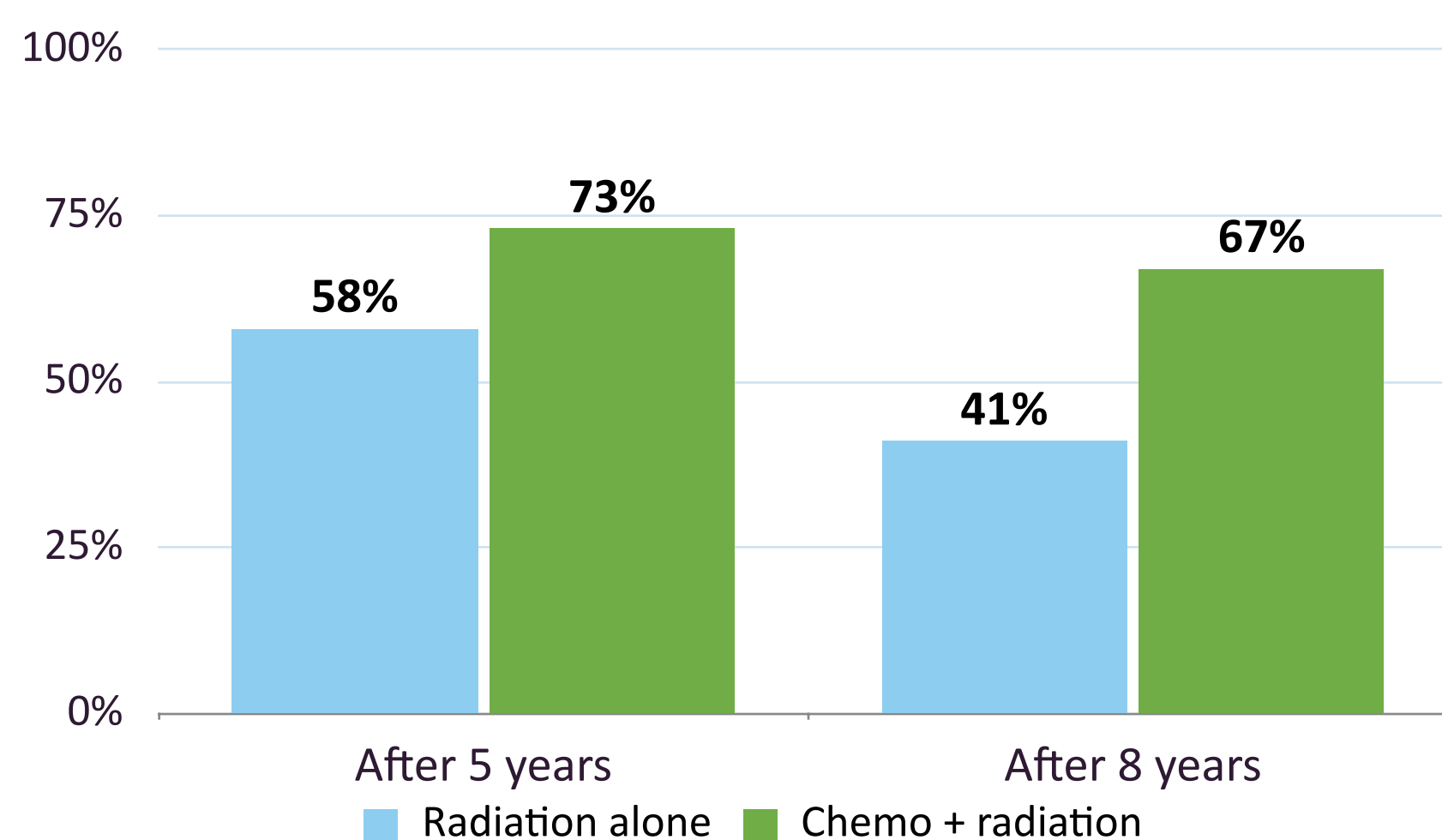
45 read in full

30 included

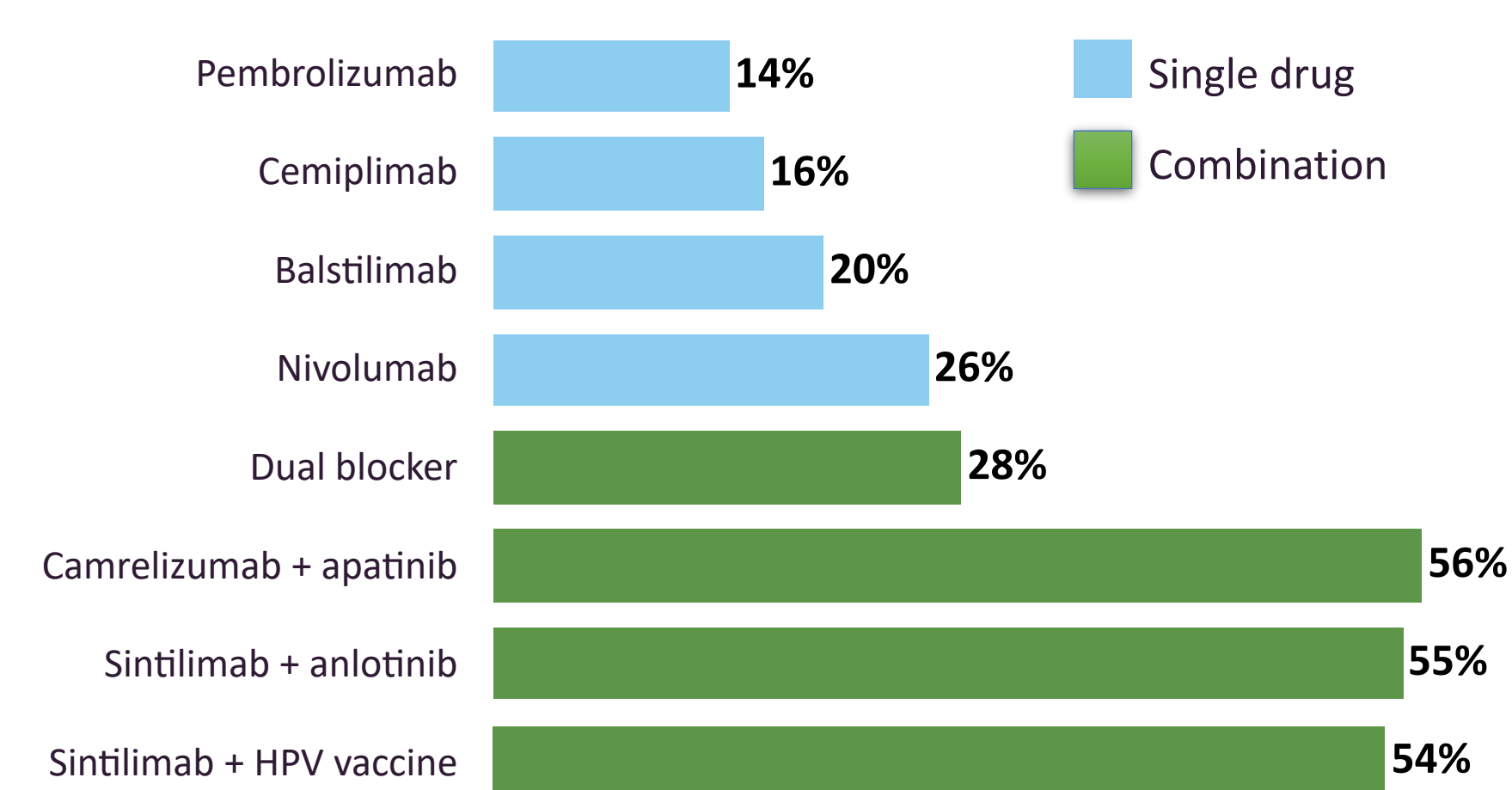
Results



Adding chemo to radiation helps women live longer



Share of patients whose tumors shrank



Discussion

The collected evidence from clinical trials and meta-analyses underscores the importance of careful selection of treatment regimens based on disease stage, patient characteristics, and prioritized goals.

Surgery is still the gold standard for early-stage cancer, while locally advanced stages benefit from concurrent chemo- and radiotherapy. Advances in radiation delivery also make a difference in terms of side effects.

Novel immunotherapeutic strategies are shaping outcomes in advanced or recurrent disease scenarios.

Conclusion

Cancer stage guides care: surgery first, then chemo + radiation, then immunotherapy for advanced disease. Immunotherapy, especially in combinations, is a promising new option.

From a global health perspective, expanding access to effective, low-toxicity therapies remains essential to reducing mortality worldwide. Future clinical development should therefore emphasize innovation, affordability, scalability, and applicability across diverse healthcare settings.

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Prevention still matters: HPV vaccines and screening are the first line of defense

