



Time to accept a new old standard of care in cervical cancer

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The Laparoscopic Approach to Cervical Cancer (LACC) trial disrupted the long-standing consensus that minimally invasive and open surgery are equally effective approaches to radical hysterectomy for cervical cancer.¹ The study's main finding, namely that radical hysterectomy by a minimally invasive route leads to higher rates of recurrence than laparotomy, has been cited 313 times in less than 2 years, underscoring the vibrant discourse that has ensued. While some commentators continue to favor the use of minimally invasive surgery in clinical practice while additional randomized trials are in progress, national and international guidelines have coalesced around the notion that laparotomy is the evidence-based approach to radical hysterectomy for early-stage cervical cancer.^{2–5} In addition to LACC, these guidelines have cited a growing literature of adequately powered, well-designed observational studies that, overall, have had concordant results.^{6–15}

In this issue of the *International Journal of Gynecological Cancer*, Chiva and colleagues¹⁶ present additional evidence of the deleterious effect of minimally invasive radical hysterectomy, and suggest possible mechanisms underlying this association. The SUCCOR study is a large, retrospective, observational cohort study that evaluates associations between surgical approach and survival outcomes among women with International Federation of Gynecology and Obstetrics (FIGO) 2009 stage 1B1 cervical cancer within 126 institutions in 29 European countries. This study has several important strengths that distinguish it from related observational studies. First, the inclusion of 693 patients provided enough statistical power to detect clinically meaningful differences in survival outcomes. Moreover, because women who received minimally invasive surgery were compared with others who underwent laparotomy during the same time period, the SUCCOR study avoids biases introduced by the use of historic controls, a practice that plagues many observational studies of minimally invasive radical hysterectomy. Chiva and colleagues also utilized well-defined inclusion and exclusion criteria and employed propensity score methods to adjust for variables that may confound the relationship between surgical approach and oncologic outcomes. Finally, their efforts to assess how manipulator use

and vaginal closure may modify the magnitude of the associations between minimally invasive hysterectomy and adverse survival outcomes is an important step in elucidating the factors that may mediate these effects. While some recent well-designed observational studies have not found an association between minimally invasive radical hysterectomy and recurrence or death,^{17 18} the majority of such studies^{6–15} have found evidence of harm. The SUCCOR study delivers another significant blow to a surgical paradigm that is increasingly difficult to justify in routine clinical practice.

While SUCCOR is a high-quality observational study, there are several important limitations. The possibility of residual confounding limits our confidence that the estimated hazard ratios are unbiased measures of the causal effect of minimally invasive radical hysterectomy. However, since patients who undergo minimally invasive surgery tend to have favorable prognostic features compared with those who receive open surgery, residual confounding is likely to lead to an underestimation of the harms of minimally invasive surgery, and therefore unlikely to alter the study's qualitative conclusions. Another important caveat is that while Chiva and colleagues did not find statistically significant differences in outcomes between surgical approaches among women with tumors smaller than 2 cm, the absence of statistical significance should not be interpreted as evidence of the absence of harm in this population. The hazard ratio estimates and associated confidence intervals in this subgroup are not reassuring, and we caution against concluding, based on these data, that a minimally invasive approach is safe for patients with small tumors. Similarly, while the data, which suggest that avoidance of uterine manipulators and vaginal closure before colpotomy might reduce harm from minimally invasive surgery, are provocative, such techniques must be tested in controlled trials before any version of a minimally invasive radical hysterectomy can be considered for routine clinical practice.

The benefits of minimally invasive surgery are well known, yet they cannot justify an increased risk of recurrence or death. Until a phase III randomized trial demonstrates acceptable survival outcomes with minimally invasive surgery, radical hysterectomy for

cervical cancer should be performed by laparotomy outside of research studies and unusual clinical circumstances.

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