10. The High-Risk Gynecology Patient: Assessment and Management

Guy W. Glover  
Paul G.W. Cramp

Modern surgical, anaesthetic, and nursing care has increased the safety of gynecological surgery. Clinicians as well as patients may consider it to be routine, with very low risk. However, for a small cohort of patients the physiological insult of surgery exposes them to significant risks of morbidity and mortality; these patients are usually elderly, often with malignancy or cardiopulmonary comorbidities, and having major or emergency surgery. The leading causes of intensive treatment unit (ITU) admission in postoperative gynecology patients are hemorrhage, infection, and cardiorespiratory failure, and in these patients the 6-month mortality is 26% [1]. For those age >69 years having major open procedures, the 60-day mortality rate is up to 5% [2]. The challenge remains to accurately identify those patients who have the highest risk, to stratify their level of risk, and to modify management to ameliorate the hazards. Doing so facilitates the benefits of surgery for a group of patients for whom it may previously have been denied. In any healthcare system with limited resources, it is imperative that such resources are targeted appropriately toward those with the highest risk.

The Physiological Insult

Major surgery represents a profound physiological stress (Table 10.1). The patient’s response attempts to maintain physiological homeostasis and to produce an internal environment conducive to healing and recovery.

The patient’s ability to mount an adequate stress response and to tolerate the consequences of that response is vital to their outcome. In particular, the ability to increase oxygen delivery (DO₂) to supply the increased metabolic demands of the tissues is critical. Failure to do so leads to an accumulation of oxygen debt, which is manifested as myocardial ischemia, organ dysfunction, poor wound healing, and infections. Shoemaker et al. [3] demonstrated that oxygen debt after major surgery was significantly greater in those who died or who had major complications compared to survivors. Moreover, while oxygen debt develops even in those with stable hemodynamic parameters, an increase in DO₂ above normal values is associated with improved outcome [4].
The splanchnic circulation is particularly vulnerable to hypoperfusion during the perioperative period, leading to bacterial translocation, endotoxia, and stimulation of the inflammatory cytokine cascade. Low gastric mucosal pH [5] and raised levels of interleukin-6 [6] are both associated with poorer outcome.

### An Approach to the Assessment of Risk

The assessment of risk is important for counseling the patient, directing anesthetic and surgical technique, and guiding the level of postoperative care. There should be a reasonable expectation that the preoperative assessment will