

### Recommendation-Specific Supportive Text

1. The American Society of Anesthesiologists defines levels of sedation in a continuum, varying from minimal sedation (anxiolysis), to moderate sedation or analgesia (conscious sedation), to deep sedation or analgesia, to general anesthesia (S6.1.4). Careful preprocedural assessment is indicated to define the ideal strategy for sedation and analgesia based on age and comorbidities, targeted arrhythmia, planned procedure, risk for airway obstruction, and patient wishes. General anesthesia ensures patient comfort that facilitates vascular and especially epicardial access, and also ensures immobility during catheter manipulation for mapping and ablation, especially for procedures of long duration. However, a major disadvantage of general anesthesia is its potential suppression of VA. Elimination of mental stress and the related changes in the autonomic tone during general anesthesia or deep sedation can potentially decrease the spontaneous manifestation of catecholamine-sensitive VA and the induction/maintenance of reentrant VT (S6.1.5–S6.1.8). Inhaled anesthetics that prolong action-potential duration and ventricular refractoriness (sevoflurane and isoflurane) and intravenous anesthetics that reduce sympathetic tone (dexmedetomidine) are commonly avoided for ablation procedures (S6.1.5, S6.1.6). Additionally, most of the anesthetic agents used for sedation and analgesia reduce myocardial contractility and systemic vascular resistance, causing hypotension that could be exacerbated during VT, requiring pharmacological or mechanical HS. Those cardiovascular effects are more intense at the anesthetic doses needed for general anesthesia, which additionally produce higher attenuation of sympathetic tone. General anesthesia or the use of cardiodepressive medications, such as propofol for anesthesia in patients with severely compromised LV function, can result in acute hemodynamic compromise during the ablation procedure, and its use needs to be carefully considered for these patients. If general anesthesia is used during epicardial ablation procedures, the concomitant use of muscle relaxants could preclude identification of the phrenic nerve during epicardial ablation. Use of a short-acting muscle relaxant during induction of anesthesia is acceptable, without redosing; however, it could necessitate a deeper level of anesthesia with resultant exaggeration of the above-mentioned hypotensive effects. Nevertheless, the effects of propofol on cardiac electrophysiological properties are diverse and could include arrhythmia suppression. In fact, propofol has been associated with suppression of VT and VT storm (S6.1.7). The need for sedation and analgesia varies throughout the procedure, being higher during vascular and epicardial access and cardioversion or defibrillation. On the other hand, a more superficial level of sedation (or any) is desirable to prevent VA suppression and to assure VT induction and maintenance for mapping. Short-acting agents are considered more suitable to provide those rapid changes in the requirements of sedation level during mapping and ablation of VAs (S6.1.9). Intravenous boli of midazolam and fentanyl at repeated doses as needed was reported by a single-center observational study as a feasible and safe strategy for minimal sedation in patients with idiopathic PVC or VT planned for shorter procedures (S6.1.1). However, even shorter-acting sedatives such as midazolam have the potential for suppressing idiopathic VA for prolonged periods of time and need to be used with caution during procedures targeting idiopathic VAs, such as frequent PVCs. A strategy to use shorter-acting sedatives such as propofol for allowing temporary deeper sedation is frequently used initially, and if VAs are suppressed, sedation can be reduced or discontinued to allow for arrhythmias to reappear as necessary. For patients with scar-related VTs, sedatives such as midazolam, which has the additional benefit of amnesia, do not impact on inducibility of VT and can be used in conjunction with analgesics and/or other sedatives such as propofol to achieve the desired level of sedation. Continuous infusion of propofol, alone or complemented with repeated boli of fentanyl (as needed), has been proposed for deep sedation of stable patients during ablation of idiopathic or scar-related VT that are expected to have a longer duration or that require more painful and challenging techniques, such as epicardial access. Two single-center observational studies reported that this strategy can be safely performed in this subset of patients under close hemodynamic monitoring (S6.1.1, S6.1.2). Propofol had to be discontinued (switched to midazolam) in 11.7% of the procedures, predominantly due to hypotension presenting in elderly patients and prolonged procedural duration (S6.1.2). Respiratory depression resulting in sustained oxygen saturation of <90% requiring reduction of propofol and transitory mechanical maneuvers to assist ventilation was present in 1.5% of the patients in the same study.
2. The selection of sedation strategy for patients undergoing ablation of VAs requires a balance between the desire of assuring a comfortable and safe procedure and the need to induce the targeted arrhythmia (S6.1.9). Proactive communication between the operator and the anesthesia team and with the patient about the patient's needs and desires, as well as the electrophysiological requirements, helps to select a sedation strategy that is in the best interest of the patient.
3. In the prospective arm of a large observational study, in which patients with sustained, monomorphic VT and