**Table 1. Electrocardiographic features of idiopathic ventricular arrhythmia by origin site**

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| Location of VA | QRS morphology | Timing |
| Left ventricle |  |  |
| *LVOT* | - LBBB (Septal) - RBBB (AMC) - Inferior axis - Ratio of QS in II and III > 1 (Septal) - Positive precordial concordance and no S in V6 (AMC) - R-wave amplitude in lead I (≥0.1 mV) - V2S/V3R index <1.5 | QRS-RVA interval ≥49 ms |
| *Aortic sinus cusps* | - LBBB  - Right inferior axis - rS morphology in lead V1or V2, or both - R/S-wave transition between V2 and V3 - TZ index <0 - R-wave duration index ≥50% - R/S-wave amplitude index ≥30% - Notched M or W in V1, QS or RS in lead I (LCC) - Broad R in V1 (RCC) |  |
| *Mitral annulus* | - RBBB - Inferior axis - Early precordial transition - Broad R waves in V1 through V6 - Late inferior lead notching; wider QRS, late S wave (Anterolateral) - Absence of notching in inferior leads (Posterior) |  |
| *Papillary muscle* | - RBBB  - Superior axis (Posteromedial)  - Inferior axis (Anterolateral)  - Broad QRS complex  - Monophasic R and qR pattern  - Notch in precordial leads |  |
| *Fascicular* | - RBBB  - rsR' morphology pattern in lead V1  - Left anterior hemiblock  - Posterior hemiblock  - Q in limb leads |  |
| Epicardium |  | - Pseudodelta wave >34 ms - Intrinsicoid deflection >85 ms - RS duration >121 ms |
| *Anteroir coronary vein* | - Loss of R wave from V1 to V2 - Broad R wave in V3 through V6 |  |
| *Cardiac crux* | - LBBB - Left superior axis - QS in inferior leads - R>S in V2 - MDI > 0.55 - Slurred intrinsicoid deflection - Deep S wave in V6 (Apical crux) - R>S in aVR (Apical crux) - R<S in V6 (Basal crux) - R>S in V5 (Basal crux) |  |
| Superior-basal & intramural surrounded by LVOT, RVOT, and GCV-AIV | - LBBB - Inferior axis - R/S-wave transition between V3 and V4 - Predominant S wave in V1 and V2 - qs or rs in lead I - Q-ratio[L/R]>1  - Dominant S-waves in V1 and V2 |  |
| Right ventricle |  |  |
| *RVOT* | - LBBB  - Right inferior axis - rS morphology in lead V1or V2, or both - R/S-wave transition between V3and V4 - rS pattern in lead I (Anterior/Septal RVOT) - Notching II, III, and aVF (Posterior/Free wall RVOT) - Wide QRS with low amplitude (Posterior/Free wall RVOT) |  |
| *RV inflow tract* | - LBBB  - Left inferior axis - Early broad R wave in V2 (Septal) - R/S-wave transition between V3 and V4 (Free-wall) |  |
| *Pulmonary artery* | - LBBB  - Inferior axis  - QS/rS pattern in lead I  - aVL/aVR ratio of Q-wave amplitude >1  - R/S ratio <1 in lead V2 |  |

Abbreviations: VA: ventricular arrhythmia; LVOT: left ventricular outflow tr

act; L/RBBB: left/right bundle branch block; AMC: aortomitral continuity; QRS-RVA: interval from the onset of the earliest QRS complex of premature ventricular contractions to the distal right ventricular apical signal; V2S/V3R: index defined as the S-wave amplitude in lead V2 divided by the R-wave amplitude in lead V3 during the OT-VA; TZ: index defined according to the site of R-wave transition of sinus beats and OT-VAs. LCC: left coronary cusp; RCC: right coronary cusp; MDI: maximal deflection index; GCV-AIV: transitional zone from the great cardiac vein to the anterior interventricular vein