Sudden cardiac death in cancer patients: results from the Paris-Sudden Death Expertise Centre

M. Mirabel, J.S. Hulot, A. Lillo-Lelouet, X. Jouven, E. Marijon

European Hospital Georges Pompidou, Paris, France
Funding Acknowledgement: Type of funding source: None

Background: Sudden cardiac death (SCD) in cancer patients regardless of their therapies has not been addressed.

Methods: Population-based registry (2011) via multiple sources to collect every case of SCD in Paris and its suburbs, covering a population of 6.6 million. Data of SCD patients (2011–2017) were analysed by identifying patients with known cancer or past medical history of cancer. Categorical variables were compared using chi-square test or Fisher's exact test; continuous variables using Student t-test or Wilcoxon rank sum test, as appropriate.

Results: Of 22,570 out of hospital cardiac arrests, 3,311 SCD patients (124 cancer patients and 3,187 non cancer patients) were admitted alive to the hospital and were included in the analysis. Characteristics of patients and cardiac arrest circumstances differed on univariate analysis (Table). The final aetiology of SCD varied: more respiratory causes to SCD (pulmonary embolism and hypoxia) among cancer patients and less acute coronary artery syndromes.

Conclusions: SCD in cancer patients differs significantly when compared to non-cancer patients. Coronary events are less prominent whereas respiratory causes are common aetiologies in cancer.

Characteristics of SCD patients

Sudden cardiac arrests	All N=3,311 (%)	No cancer N=3,187 (%)	Cancer N=124 (%)	P
Age (years±SD)	59.5±15.7	59.2±15.7	68.4±12.3	<0.001
Male gender	2389 (72.2)	2,304 (72.3)	85 (68.5)	0.362
Prior known cardiac disease	1,092 (33.0)	1,041 (32.7)	51 (41.5)	0.046
≥1 cardiovascular risk factor	2,682 (81.7)	2,591 (81.9)	91 (74.6)	0.047
Hypertension	1,262 (38.5)	1,204 (38.1)	58 (48.3)	0.025
Overweight (BMI >25 kg/m^2)	1150 (35.1)	1,113 (35.3)	37 (30.3)	0.263
Current smoking	1,097 (33.7)	1,071 (34.2)	26 (21.5)	0.013
Dyslipidemia	743 (22.6)	713 (22.6)	30 (25.0)	0.525
Diabetes mellitus	579 (17.6)	554 (17.5)	25 (20.7)	0.374
Public place (vs home)	1,443 (43.6)	1,403 (44.1)	40 (32.3)	0.009
Time from EMS call to EMS arrival, median (IQR)	31.4±29.0	31.7±29.2	22.8±20.0	0.003
Initial shockable rhythm	1,783 (53.9)	1,736 (54.5)	47 (37.9)	<0.001
Epinephrine use (mg)	3.8±4.6	3.8±4.6	2.9±3.8	0.030
ST segment elevation on first ECG	996 (43.8)	969 (44.5)	27 (28.1)	0.001
Discharged alive	992 (30.0%)	957 (30.1)	35 (28.2)	0.665