Outcome and prognostic factors of COVID-19 infection in cancer patients: Final results of SAKK 80/20

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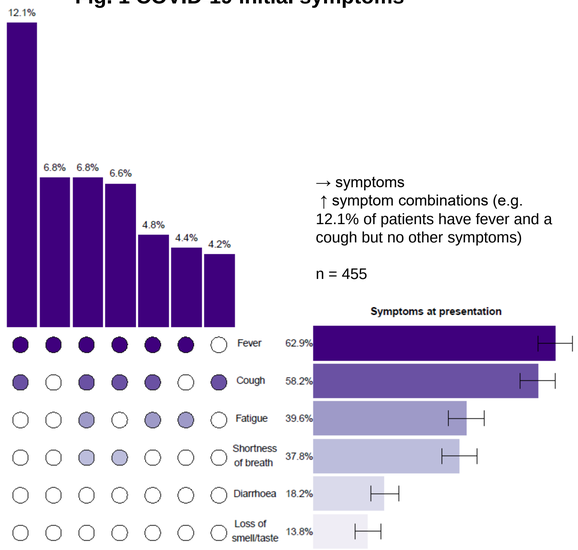
Background

- Cancer patients are at an increased risk of unfavourable outcome of COVID-19 infection

Methods

- Study collecting data from symptomatic SARS-CoV-2 infected cancer pts starting March 1, 2020
- 23 Swiss sites covering the majority of CH
- Pts with solid and hematological malignancies
- 1st objective: Outcome of COVID-19 infection
- Main 2nd objective: Prognostic factors

Fig. 1 COVID-19 initial symptoms



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Results

- With a data cutoff on March 15, 2021, 455 patients were enrolled
- COVID-19 diagnosis was based on nasopharyngeal swabs (PCR+) in 428 cases (94.1%)
- Significant univariable covariates in logistic regression (outcome death) included gender, age 65+, non-curative disease, ICU, oxygen requirement, cardiovascular disease

Patient characteristics	N	%
Gender (m/f)	261 / 194	57.4% / 42.6%
Age (65+ / 18–64)	273 / 182	60.0% / 40.0%
Solid tumor / hematological malignancy Breast / lung / prostate cancer / myeloma	334 / 119 63 / 47 / 25 / 19	73.7% / 26.3% 13.9% / 10.4% / 5.5% / 4.2%
Non-curative / curative tumor disease	205 / 200	50.6% / 49.4%
Systemic anticancer treatment within 3 months (Y/N) Chemotherapy Targeted agents Steroids Endocrine treatment Checkpoint inhibitors	221 / 228 98 93 52 42 33	49.2% / 50.8% 21.8% 20.7% 11.6% 9.4% 7.3%
Comorbidity other than COVID-19 (Y/N) Cardiovascular disease Lung disease Diabetes Adipositas Cachexia / malnutrition	378 / 77 244 66 63 45 34	83.1% / 16.9% 53.6% 14.5% 13.8% 9.9% 7.5%

Clinical outcome of COVID-19 infection	Yes: n (%)	No: n (%)
Hospitalization for COVID-19	285 (62.6%)	164 (36.5%)
Oxygen requirement	213 (46.8%)	242 (53.2%)
ICU admission	62 (13.6%)	393 (86.4%)
Invasive ventilation	43 (9.5%)	412 (90.5%)
COVID-19 mortality **In all studied cancer pts** In hospitalized cancer pts In cancer pts requiring oxygen In cancer pts admitted to ICU	 **98 (21.5%)** 91 (31.9%) 88 (41.3%) 35 (56.5%)	 357 (78.5%) 194 (68.1%) 125 (58.7%) 27 (43.5%)
Specific treatment during COVID-19 Antibiotics Chloroquine Antivirals Steroids Fungistatics	358 (78.7%) 227 (49.9%) 102 (22.4%) 61 (13.4%) 78 (17.1%) 41 (9.0%)	97 (21.3%) 228 (50.1%) 353 (77.6%) 394 (86.6%) 377 (82.9%) 414 (91.0%)

Conflicts of Interest

All COI are outside the submitted work

Multiple logistic regression model (outcome: death)	Odds ratio (95% CI)	P value
Oxygen requirement (Y *v.* N)	22.37 (7.81 – 64.03)	< 0.001
ICU admission (Y *v.* N)	4.36 (2.16 – 8.83)	< 0.001
Age (65+ *v.* 18–64)	3.22 (1.57 – 6.59)	0.001
Disease setting (non-curative *v.* curative)	2.43 (1.26 – 4.69)	0.008
Chemotherapy (Y *v.* N)	1.52 (0.78 – 2.98)	0.221
Gender (m *v.* f)	1.28 (0.70 – 2.35)	0.427
Tumor type (hematologic *v.* solid)	0.92 (0.49 – 1.74)	0.801

Due to missingness on covariables, this model is based on 431 pts with 93 deaths

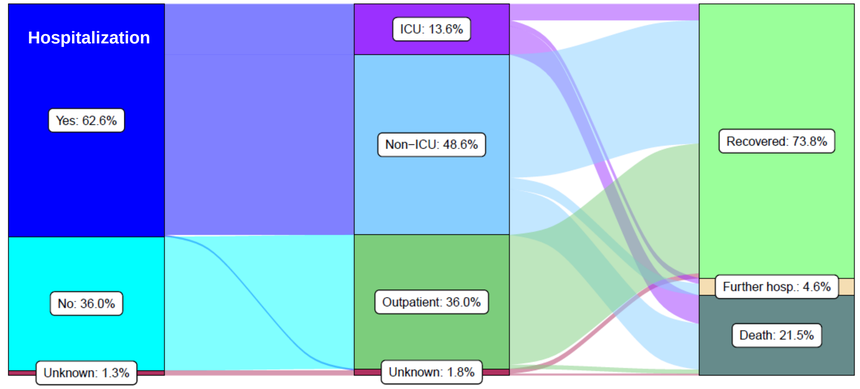

Fig. 2 Alluvial plot of hospitalization and clinical course (n = 455)

Conclusion

- COVID-19 mortality in Swiss cancer patients is high (21.5%)
- Substantial rate of hospitalization (62.6%) and ICU admission (13.6%)
- A decentralized health care system like CH had outcome data comparable to highly centralized systems like the UK or U.S.

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