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Medical Centre, Utrecht, Netherlands, <sup>9</sup>Emma Children's Hospital / Academic Medical Center, Amsterdam, Netherlands, <sup>10</sup>St. Jude Children's Research Hospital, Memphis, TN, <sup>11</sup>St. Jude Children's Research Hospital, Memphis, TN, <sup>12</sup>Department of Medical Physics, Memorial Sloan Kettering Cancer Center, New York, NY, <sup>13</sup>Department of Pediatrics, University of Rochester Medical Center, Rochester, NY

**Purpose/Objective(s):** Ovarian failure is associated with physiologic and psychologic morbidities. The PENTEC task force aimed to quantify radiation (RT) dose effects to ovary during treatment for childhood cancer.

**Materials/Methods:** End-points included acute ovarian failure (AOF; loss of function  $\leq$  5y from diagnosis) and premature ovarian insufficiency (POI; loss of function  $<$  40 yo) both of which impact fertility and estrogen production. Relevant studies from 1970-2017 were identified systematically through PubMed, Medline, and Cochrane databases, including additional papers from 2018-2021. Crude rates for each RT dose/ treatment group were extracted where possible. Dose to least affected ovary (LAO, ovary with lowest RT dose) was considered in all analyses. One large study reported sufficient data to allow conversion of published Cox models to logistic regression models of POI, and another provided a published model of AOF: From these, the risks of AOF/ POI as functions of age, RT dose to LAO, and the alkylating agent cumulative dose (Cyclophosphamide Equivalent Dose [CED] in  $\text{g}/\text{m}^2$ ), were calculated.

**Results:** The risk of AOF increases with RT dose to LAO, CED, age at RT, and stem cell transplantation<sup>1</sup>. Radiation dose to LAO corresponding to 5% AOF risk with CED=0 was 7, 6, 4.5, 3.5 and 2 Gy for persons aged 1, 5, 10, 15, and 20 yo, respectively. With high alkylating chemotherapy exposure (CED $\geq$ 30), 5% AOF risk corresponded to  $<$ 2 Gy for all ages, with 2 Gy to the LAO resulting in AOF risk of 6%, 7%, 9%, 11%, and 13% for ages 1, 5, 10, 15 and 20 yo, respectively. AOF risk was  $\geq$ 50% at dose 24/ 20 Gy (age 1/20yo, respectively) with CED=0 and dose 17/ 13 Gy with CED=30. Risk of POI was determined from models using SJLIFE cohort of 10yr childhood cancer survivors  $\geq$ 18yo, median age 8yo at time of RT: The risk of POI with no RT nor CED is  $<$ 5% in this population. With  $<$ 10Gy to LAO, risk of POI with CED=0 is 10% by 20yo, 12% at 30yo, and 41% at 40yo; with CED $\geq$ 20, risk of POI increases to 32%, 46%, and 90%, respectively. With  $\geq$ 10Gy to LAO, risk of POI with CED=0 is 61% at 20yo, 75% at 30yo, and 100% at 40yo. Combination of RT  $\geq$ 10Gy to LAO and CED  $\geq$ 20 results in POI risk nearing 100% by age 20yo.

**Conclusion:** Risk of AOF and POI depend on age, CED, and RT dose. Doses to LAO of 5, 4, 3, and 2 Gy for persons  $\leq$ 5, 5-10, 10-15, and 15-20yo, respectively, with CED=0, are suggested for  $<$ 5% risk AOF. With high CED, AOF risk is  $>$  5% for all patients with LAO dose  $<$ 2 Gy, and risk of POI by age 20 yo approaches 100%. Treatment of life-threatening malignancy remains a priority over ovarian preservation; when possible, radiation and surgical techniques should be considered to minimize LAO dose. After RT, risk of POI increases significantly as survivors approach 4<sup>th</sup> decade of life; those desiring pregnancy should be counseled early to maximize reproductive options.

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## 3028

### Adult Survivors of Childhood Cancer: Views on COVID-19 and Vaccination

A.G. Pritchard,<sup>1</sup> J. Toy,<sup>2</sup> J.M. Loree,<sup>1</sup> L. Nica,<sup>3</sup> A.F. Howard,<sup>2</sup> E. Ocampo-Zapata,<sup>3</sup> and K. Goddard<sup>1</sup>; <sup>1</sup>BC Cancer - Vancouver Centre, Vancouver, BC, Canada, <sup>2</sup>University of British Columbia, Vancouver, BC, Canada, <sup>3</sup>BC Cancer Agency, Vancouver, BC, Canada

**Purpose/Objective(s):** Adult childhood cancer survivors (ACCS) are at increased risk of developing late effects because of their childhood cancer treatment, including cognitive delay, diabetes, metabolic syndrome, and organ damage. Consequently, many ACCS may be at increased risk for worse outcomes with COVID-19 infection. It is important to determine ACCS views on the COVID-19 pandemic and vaccination.

**Materials/Methods:** A non-validated survey was created using multi-disciplinary input. Prior to the widespread rollout of COVID-19 vaccinations in Canada, we emailed an online survey to 235 ACCS followed through the BC Cancer Late Effects and Follow-Up clinic who had provided informed consent to email contact, receiving 89 responses (37.9% RR) which were analyzed. Statistical analysis was calculated using Chi-Squared test of association.

**Results:** Survey respondents were majority female (61%). The most common age range was 30-39 (30%) followed by 20-29 (28%). Most were of European descent (47%) and lived in an urban center (75%). The vast majority completed high school (97%), as well as post-secondary education (PSE, 73%). Only 29% did not use Complimentary or Alternative medicines (CAM), with herbal products being most common (48%), as well as massage therapy or other bodywork (46%). The most reported sources of health information were primary care practitioners (PCP, 80%), traditional media (60%), and specialized hospital clinics (46%). Of all respondents, 67% believed that ACCS should be prioritized for vaccination, with 87% indicating they would receive a COVID-19 vaccination if available. 78% and 89% believed that COVID-19 was a serious health problem for themselves or others, respectively. Views were evaluated across multiple subgroups. Respondents who had completed PSE were more likely to see COVID-19 as a risk to themselves (80% vs 71%,  $p=0.358$ ), to others (94% vs 75%,  $p=0.012$ ), and more likely to receive a vaccine (89% vs 79%,  $p=0.217$ ). Respondents who received health information from traditional media felt COVID-19 was more likely to harm themselves (79% vs 75%,  $p=0.638$ ), to harm others (93% vs 83%,  $p=0.181$ ) and more likely to receive a vaccine (93% vs 78%,  $p=0.047$ ). A similar trend was seen in those who receive information from a PCP, but without statistical significance. The opposite is true if health information is received from family or friends, with these respondents being less likely to feel COVID-19 poses a risk of harm to themselves (76% vs 78%,  $p=0.79$ ), less likely to harm others (86% vs 90%,  $p=0.595$ ), and a lower likelihood to get a vaccine (76% vs 92%,  $p=0.041$ ). There was no discernable trend when examining by further subgroups, including CAM usage, age group, location, or other sources of health information.

**Conclusion:** Many ACCS appear to underestimate their risk from COVID-19; whether patients had completed PSE and the location from which they receive health information appeared to correlate most strongly with these results.

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### Long-Term Toxicities of Adolescent and Young Adult Survivors of Cervix Cancer Who Underwent Radiation Therapy: A Cross-Sectional Analysis

A.G. Pritchard,<sup>1</sup> M. Altas,<sup>2</sup> A. Tinker,<sup>1</sup> I. Kong,<sup>1</sup> K. Goddard,<sup>1</sup> P. Lim,<sup>1</sup> and S.N. Hamilton<sup>3</sup>; <sup>1</sup>BC Cancer - Vancouver Centre, Vancouver, BC, Canada, <sup>2</sup>University of British Columbia, Vancouver, BC, Canada, <sup>3</sup>BC Cancer, Vancouver, BC, Canada

**Purpose/Objective(s):** Survivors of adolescent and young adult (AYA) cervical cancer who undergo radiation therapy are at risk of significant long-term health sequelae. This study seeks to evaluate long-term toxicities and their impacts on survivors.

**Materials/Methods:** Patients treated for cervical cancer with radiation therapy between ages 18-39 in the years 2000-2009 from any center in our province were eligible. 100 patients with current mailing addresses were identified and mailed a package containing a questionnaire devised by a