

# Sailing in the mist: cardiotoxicity monitoring in adolescent and young adult osteosarcoma patients

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## Background

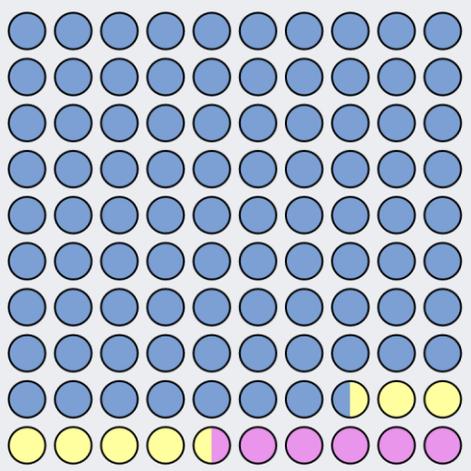
Baseline risk stratification models for developing cardiotoxicity of doxorubicin are in part based on patient-related risk factors (age, pre-existing cardiovascular disease, comorbidities). Osteosarcoma is one of the most common malignancies among adolescents and young adults (AYAs) and these patients are at risk of developing heart failure (HF) events due to doxorubicin containing chemotherapy regimens.

We aimed to evaluate the usability of patient-related risk factors for cardiotoxicity in AYAs exposed to high cumulative dose of doxorubicin

## Methods

Retrospective cohort study at single tertiary sarcoma center on **401 high grade osteosarcoma patients** (time frame: 1982-2017; median age 19 [15-30] years)

## Main finding I



50-64 y.o.  
1-2 CV risk factors

> 65 y.o. at diagnosis  
> 2 CV risk factors  
Diabetes  
Pre-existing CV disease

	# / high risk pt
	12/23
	6/23
	5/23
	5/23

**Only a small portion of patients (23, 5.7%) were classified as high risk**, most frequently based on age. **Pre-existing CV disease was rare** (1.2% of patients).

The intermediate risk patients were solely classified as such based on the age criterium.

## Main finding II

**No significant difference in incidence of composite outcome of heart failure medication initiation, heart failure hospitalization, ICD implantation, heart-failure related mortality at follow up between high risk and low-intermediate risk patients** (Total number of events: 23; Fisher's exact:  $p=0.633$ ).

**High risk** 2/23 (8.7%)  
**Low-intermediate risk** 21/357 (5.6%)

## Conclusions

**Current patient-related factor cardiotoxicity risk stratification models are insufficient for an AYA population on cardiotoxic chemotherapy.**