

Management of Cardiovascular Medications in Acute Leukemia: A National Survey



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Background

- Cardiovascular (CV) disease (CVD) is the most common non-cancer cause of late morbidity and mortality in cancer survivors
- Most acute leukemia (AL) treatment protocols contain cardiotoxic chemotherapy agents (e.g., anthracyclines)
- CV medications pose potential risks to AL patients prone to bleeding and volume depletion and are often stopped
- Evidence from surgical and CVD populations shows CV medication interruption can significantly increase CV event rates
- Certain CV medications prevent anthracycline cardiotoxicity
- It is currently unknown how CV medications are managed in Canadian leukemia/bone marrow transplant (L/BMT) centres

Objectives

- Determine common prescribing practices of statins, antiplatelet agents, angiotensin converting enzyme inhibitors (ACEI) and angiotensin II receptor blockers (ARB) in AL patients
 - Frequency, timing and rationale for therapy interruptions
- Compare strategies used to reduce anthracycline cardiotoxicity in British Columbia (BC) to the rest of Canada
- Characterize prescriber attitudes toward clinical pharmacy support for the management of CV medications in AL patients

Methods

Design: Electronic sample survey using UBC Survey Tool

Inclusion Criteria: Hematologists from consenting Canadian L/BMT centres that treat adults with AL

Exclusion criteria: Incomplete surveys

Questionnaire:

- 30-question, pilot-tested, online survey distributed via email
- Questionnaire sections:
 - Prescribing practices of statins, antiplatelets, and ACEI/ARBs
 - Strategies for mitigating risk of anthracycline cardiotoxicity
 - Role of pharmacists in managing CV medications in AL
- 2 email reminders and 1 telephone reminder

Study Dates: January 29 to March 30, 2018

Statistical analysis: Descriptive, Mann-Whitney U & Chi-Squared

Response

- 11 of 16 L/BMT centres in Canada agreed to participate
- 98 hematologists invited → 26 completed → response rate 27%

Table 1: Demographics

Demographic Characteristics	N (%)	Demographic Characteristics	N (%)		
Years in clinical practice	< 5	9 (35%)	Time spent in direct patient care	0%	0 (0%)
	5-15	11 (42%)	25%	2 (8%)	
	16-25	4 (15%)	50%	10 (38%)	
	> 25	2 (8%)	75%	11 (42%)	
Location ¹	Western Canada	15 (58%)	100%	3 (12%)	
	Central Canada	8 (31%)	[1] Western Canada (BC, AB, SK, MN); Central Canada (ON, QC); Eastern Canada (NS, NL)		
	Eastern Canada	3 (11%)			

Figure 1: Frequency & Timing of Medication Interruption

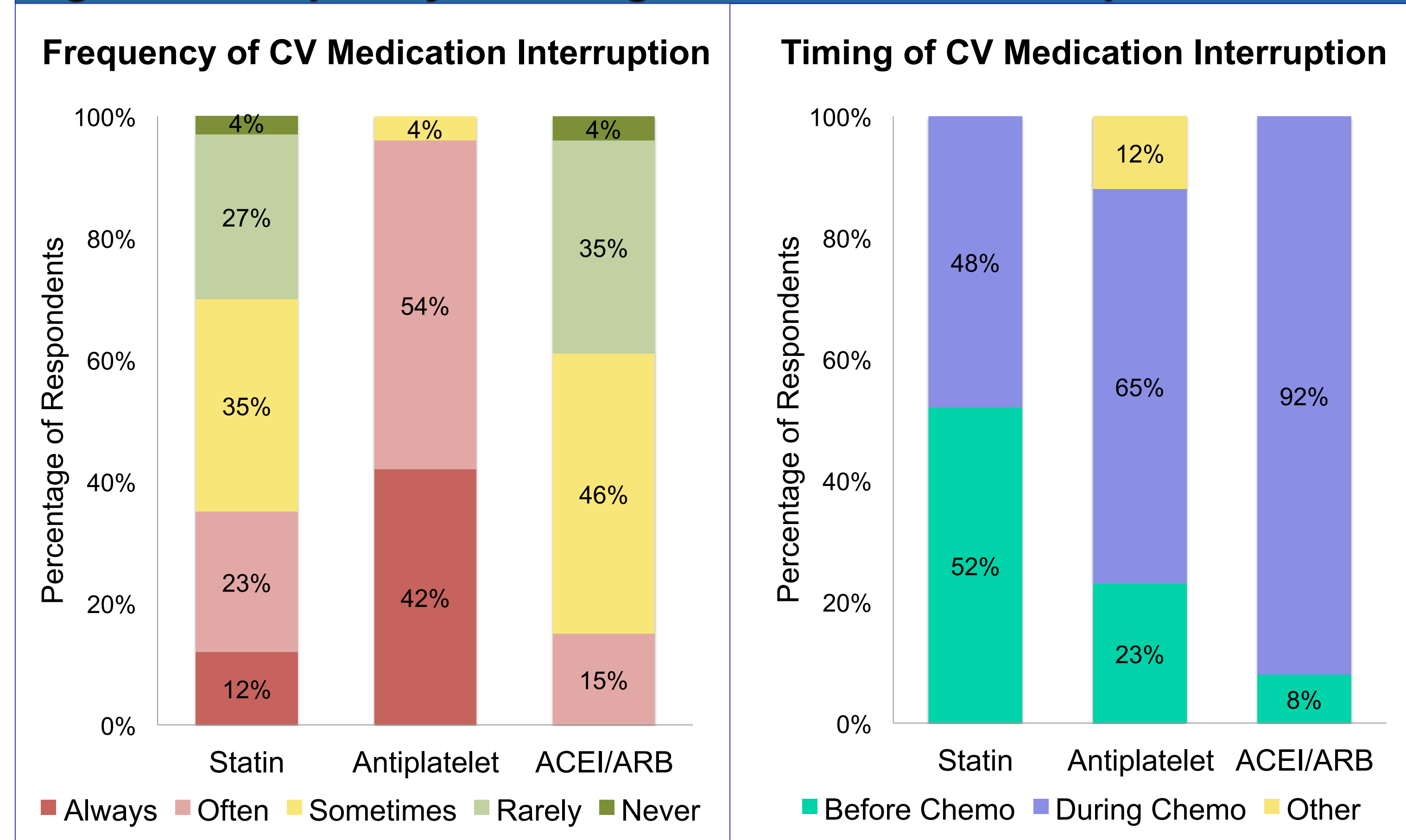


Figure 2: Rationale for CV Medication Interruption

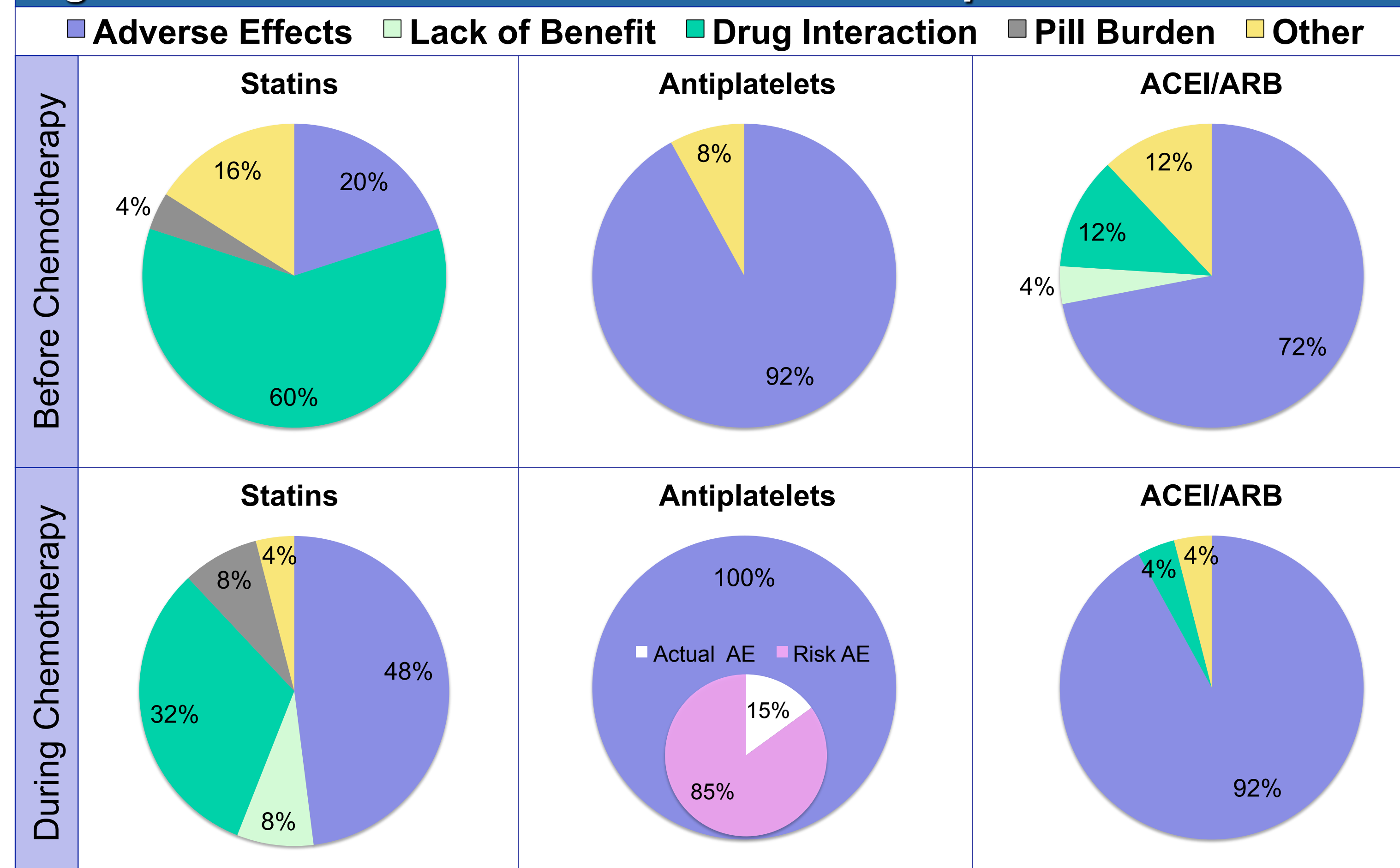
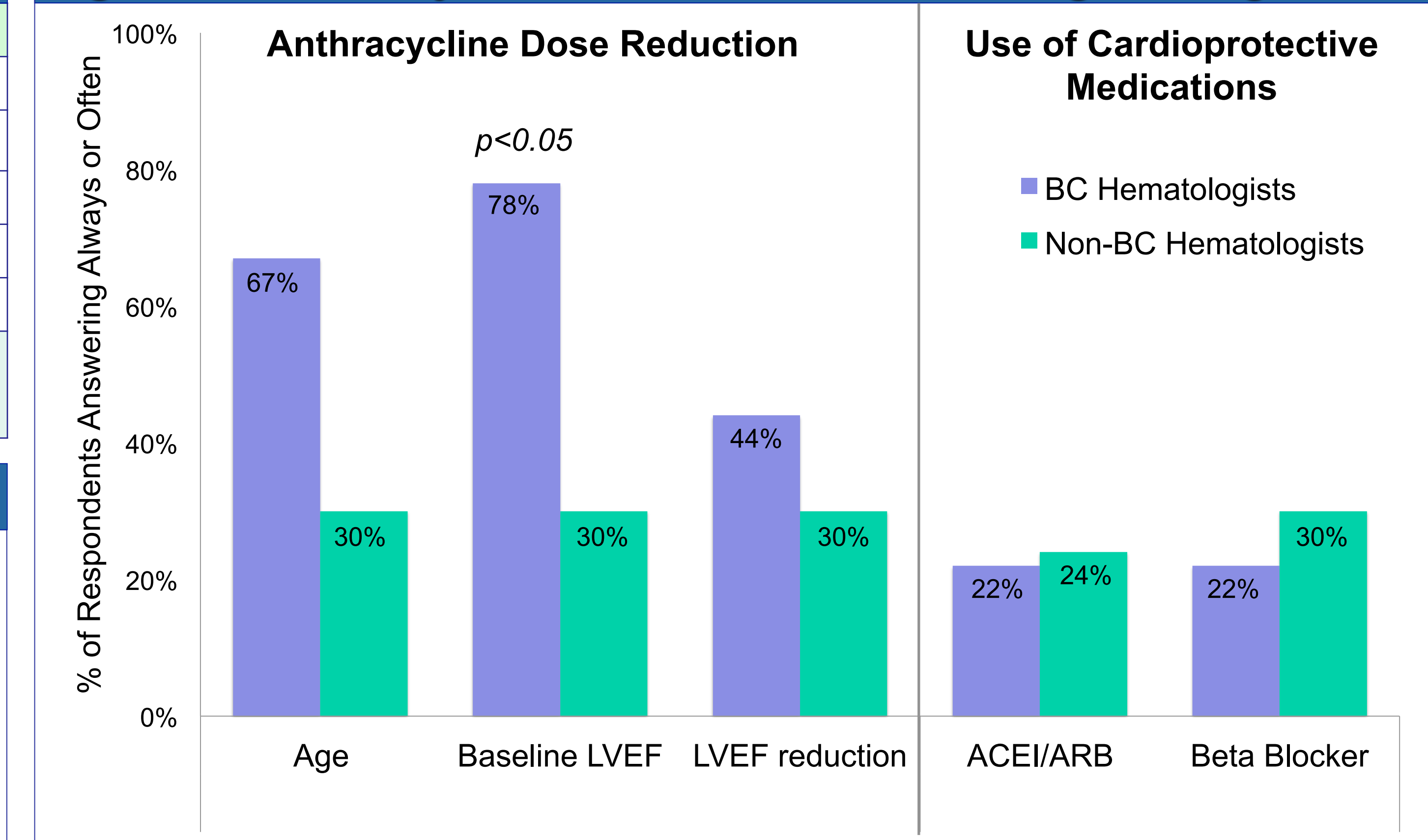


Figure 4: Anthracycline Cardiac Risk Reducing Strategies



Additional Results

- Approximately half of hematologists do not consider medication indication in their decision to interrupt CV medications
- 77% of hematologists do not routinely switch a patient's statin to one with lower risk of drug interactions (e.g. pravastatin)
- 27% of hematologists do not have access to a full-time clinical pharmacist, yet 83% thought it would be very/extremely helpful

Limitations

- Non-response bias – lower than desired response rate and unequal distribution of response rate by L/BMT centre
- Proportionally low representation from central Canada
- 5 Canadian L/BMT centres did not agree to participate

Conclusions

- Over 60% of hematologists sometimes, often, or always interrupt CV medications which may lead to adverse CV outcomes
- There is variance in prescribing practices across Canada
- BC hematologists are more likely to empirically reduce anthracycline dose which may negatively impact treatment outcome
- National guidelines are needed to minimize unnecessary interruptions to CV therapy
- Further research is needed on the the safety and efficacy of both CV medications use in AL and anthracycline dose reductions
- Pharmacists can provide valuable assistance in managing CV medications in AL patients

