Cancer Patient Safety: An Integrative Literature Review

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INTRODUCTION

Systemic antineoplastic treatment is used in a wide variety of patients with cancer and can be administered for potentially curative or palliative purposes. Although this treatment has a real benefit, adverse drug reactions in patients with cancer are still very common, leading to delays in subsequent prescribed cycles, non-adherence to treatment, and additional healthcare costs for toxicity management. This study aimed to synthesize knowledge about the systemic antineoplastic treatment toxicity profile to be adopted as a parameter for safe prescription. It is intended to obtain evidence that can improve the quality and safety of systemic antineoplastic treatment prescription, in order to provide information on treatment toxicity as well as risk management strategies in this context.

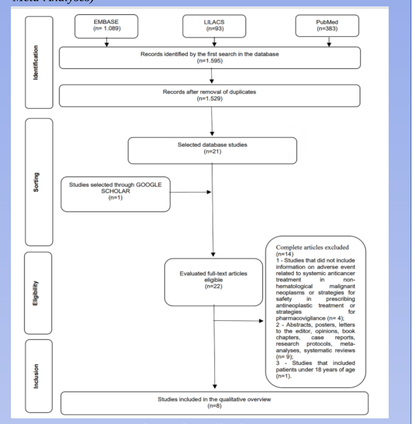
METHODS

This is an integrative review carried out in the EMBASE, LILACS, and PubMed databases, from 2015 to 2019. The evaluation of the individual methodological quality of the primary studies included in the sample was performed using the Joanna Briggs Institute (JBI).

RESULTS AND DISCUSSION

Eight studies were included in this integrative review, of which 5 addressed adverse events related to systemic antineoplastic treatment, including 4,970 patients treated with immunotherapy, target therapy, and chemotherapy. One study evaluated the safety of prescribing antineoplastic agents and 2 studies addressed pharmacovigilance and risk management by assessing treatment-related adverse effects. Based on the evaluation of the methodological quality using the JBI tool, seven studies included presented scores above 70%, reaching the low risk of bias and high methodological quality according to the JBI tool, while one study presented a score of 69.2%, reaching moderate methodological quality.

Figure 1. Flow chart of search criteria and literature selection (adapted from *Preferred Reporting Items for Systematic Reviews and Meta-Analyses)*



Source: Own authorship.

Table 1. Evaluation of the methodological quality of the studies included according to the JBI critical evaluation *checklist* study design

Reference	Study design	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Total	Risk
Aguiar et al, 2018[d]	Prevalence	Y	N	Y	Y	Y	Y	Y	Y	NA	-	-	-	-	87,5%	Bass
Ali, Watson, 2017[d]	Prevalence	Y	Y	Y	Y	Y	Y	Y	Y	NA	-	-	-	-	100%	Bass
Belachew et al, 2016[d]	Prevalence	Y	Y	Y	Y	Y	Y	Y	Y	NA	-	-	-	-	100%	Bass
Canale et al, 2019[d]	Prevalence	Y	Y	Y	Y	N	Y	Y	Y	NA	-	-	-	-	87,5%	Bass
Desjardin et al, 2019[b]	Retrospective	Y	Y	Y	Y	Y	N	N	Y	Y	Y	-	-	-	80%	Bass
Dranitsaris et al, 2015[a]	RTC	Y	N	Y	N	N	N	Y	Y	Y	Y	Y	Y	Y	69,2%	Moderated
Patey, Gurumurthy, 2019[c]	Quasi-experimental	Y	Y	Y	N	N	S	Y	Y	Y	-	-	-	-	77,7%	Bass
Tervonen et al, 2019[b]	Retrospective	Y	Y	Y	Y	Y	N	N	Y	Y	Y	-	-	-	80%	Bass

Legend: Y (yes); N (no); NA (does not apply)
a What is JBI's tool for RCT: Q1. Has true randomization been used to assign participants to treatment groups? Q2. Has the allocation to treatment groups been hidden? Q3. Were treatment groups similar at baseline? Q4. Were participants blinded to treatment assignment? Q5. Were those administering the treatment blind for treatment allocation? Q6. Were the outcome evaluators blinded to treatment assignment? Q7. Were the treatment groups treated identically except for the intervention of interest? Q8. Was the follow-up complete and, if not, were the differences between groups in terms of follow-up adequately described and analyzed? Q9. Were the participants analyzed in the groups to which they were randomized? Q10. Were the results measured in the same way for the treatment groups? Q11. Were the results measured reliably? Q12. Was an appropriate statistical analysis used? Q13. Was the study design appropriate and were any deviations from the standard RCT design (individual randomization, parallel groups) taken into account in conducting and analyzing the study? b JBI tool questions for retrospective study: Q1. Were the groups comparable, except for the presence of disease in the cases or the absence of disease in the controls? Q2. Were the cases and controls properly combined? Q3. Were the same criteria used to identify cases and controls? Q4. Was exposure measured in a standard, valid, and reliable manner? Q5. Has exposure been measured in the same way for cases and controls? Q6. Were confounding factors identified? Q7. Have strategies been established to address confounding factors? Q8. Were the results evaluated in a standardized, valid, and reliable way for cases and controls? Q9. Was the exposure period of interest long enough to be significant? Q10. Was appropriate statistical analysis used? c Questions of the JBI tool for quasi-experimental study: Q1. Is it clear from the study what is the "cause" and what is the "effect" (that is, there is no confusion about which variable comes first)? Q2. Were participants included in any similar comparison? Q3. Were participants included in any comparisons that received similar treatment/care, other than the exposure or intervention of interest? Q4. Was there a control group? Q5. Were there multiple measurements of the outcome before and after the intervention/exposure? Q6. Was the follow-up complete and if not, were the differences between groups in terms of follow-up adequately described and analyzed? Q7. Were the results of the participants included in any comparison measured in the same way? Q8. Were the results reliably measured? Q9. Was an appropriate statistical analysis used? d Questions of the JBI tool for prevalence study: Q1. Was the sample frame appropriate to address the target population? Q2. Were study participants sampled in an appropriate way? Q3. Was the sample size adequate? Q4 Were the study subjects and the setting described in detail? Q5. Was the data analysis conducted with sufficient coverage of the identified sample? Q6. Were valid methods used for the identification of the condition? Q7. Was the condition measured in a standard, reliable way for all participants? Q8. Was there appropriate statistical analysis? Q9. Was the response rate adequate, and if not, was the low response rate managed appropriately?
Source: Own authorshi

Chemotherapy, target therapy, and immunotherapy have different toxicity profiles. It is important to identify these adverse events because the approaches are directed to each specific type of treatment. Strategies for systemic antineoplastic treatment prescription safety, such as early detection and monitoring of associated adverse events, help to minimize the damage caused by adverse reactions. A multidisciplinary approach is important to recognize, report and manage the risk of treatment.

CONCLUSION

The evidence from the studies included in this integrative review suggests that assessment of treatment-related adverse events as well as risk management strategies should be considered to improve the quality and safety of the systemic antineoplastic treatment.

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