

Immune Checkpoint Inhibitors in Pharmacological Therapy

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Objectives

The development of immunotherapy has proved to be a promising strategy in the treatment of cancer. **The role of immune checkpoint inhibitors (ICIs) is highlighted.**

This study aims to review the different ICIs available in clinical practice, analyzing the authorized therapeutic indications and reporting the main adverse effects associated with these therapeutic agents.

Methods

- Bibliographic review of the Summary of Product Characteristics of ICIs authorized by the European Medicines Agency (EMA) or the United States Food and Drug Administration (FDA);
- A search for articles, published from 2015 to 2017, was made in PubMed's electronic database.

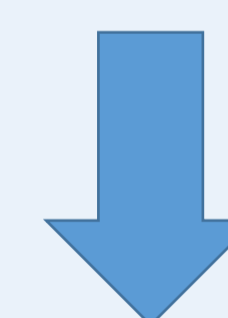
Results

ICI	ICI classification	Authorized by	Therapeutic Indications	Clinical Trials
Ipilimumab	CTL-4	Informed EMA FDA	Advanced Melanoma (AM)	Phase I studies in the treatment of AM
Pembrolizumab	PD-1			
Nivolumab	PD-1		Non-Small Cell Lung Cancer	May be associated with ipilimumab for the treatment of AM
Avelumab	PD-1	FDA	Metastatic Merkel Cell Cancer	
Atezolizumab	PD-1		Non-Small Cell Lung Cancer	-
Durvalumab	PD-1		Urothelial Cancer	

These drugs are associated with inflammatory adverse effects known as **immune-related adverse events (irAEs).**



Rash, pruritus, diarrhea, colitis, hepatitis, endocrinopathy and pneumonitis are the most common irAEs associated with ICIs.



The use of PD-1 inhibitors has demonstrated a **lower incidence** of irAEs when compared to those that block CTLA-4.

Conclusions

ICIs play a key role in the treatment of oncological diseases. Some of these drugs are still under investigation in order to evaluate their potential for other clinical indications. The safety of these drugs is considered their main challenge, presenting relevant adverse effects that require close monitoring by health professionals.