



Cytotoxic drugs with the potential to prolong the QT interval



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Background

Regulation No.173/CD/8.1.7. from the Portuguese Authority of Medicines and Health Products (INFARMED), dated 02/08/2012 and titled "Ondansetron –dose constraint for injectable drugs", recommends that “care must be taken when administering this antiemetic associated with others drugs that prolong the QT interval, namely several cytotoxic agents”. To effectively implement this recommendation, it was thought advisable to point out, in the computerized hospital drug database, all cytotoxic drugs that prolong the QT interval.

Purpose

To review all cytotoxic drugs available in the Portuguese pharmaceutical market to identify those with the potential to prolong the QT interval, in order to allow hospital pharmacists to quickly and efficiently implement the above mentioned recommendation.

Materials and methods

Literature review based upon all Summary of Product Characteristics (SPC) of cytotoxic drugs available in Portugal and 48 literature sources from the PUBMED, found by intersecting the terms “cytotoxic-induced prolongation of the QT interval”, “antineoplastic-induced prolongation of the QT interval” and “drug-induced prolongation of the QT interval” and using the limit time interval from January/2003 to September/2012.

Results

A total of 58 cytotoxic agents currently available in Portugal were analyzed.

Table 1 – Cytotoxic drugs with the potential to prolong the QT interval

Agents with the potential to prolong the QT interval	
<ul style="list-style-type: none"> -Arsenic Trioxide; -Capecitabine; - Dasatinib; - Doxorubicin; - Epirubicin; - Eribulin; 	<ul style="list-style-type: none"> - Gefitinib; -Lapatinib; - Nilotinib; - Sorafenib; - Sunitinib; - Vandetanib;

Arsenic Trioxide
Vandetanib

- Risk of torsades de pointes (TdP)
- Even when used as directed in SPC
- Supported by substantial evidence

Eribulin
Lapatinib
Nilotinib
Sunitinib

- There is insufficient evidence that they, when used as directed in SPC, have a risk of causing TdP

Bicalutamid
Tamoxifen

- Note that this antihormones also have the potential to prolong QT interval.

Conclusions

The produced database is a valuable tool to Portuguese hospital pharmacists that dispense cytotoxic drugs, contributing to implement one of the recommendations of the above-mentioned regulation.

Conflicts of Interest: nothing to disclose.