Transferability of clinical trials results to clinical practice: the example of new drugs for renal cell carcinoma

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Background

In recent years, due to scarcity of evidence at the time of registration, approved indications for anticancer drugs resemble in details patient characteristics of the pivotal RCTs.
At the same time, many authors describe the ***scarce transferability of clinical trials results to clinical practice***, due to the high selectivity of the patients' eligibility criteria.

In Italy, at the time of marketing, the majority of new anticancer drugs are subject to a compulsory electronic ***outcome registry*** called "oncoAIFA".

For prescribing and dispensing these drugs, ***clinicians*** need to enter the patient's clinical profile, as verification of correspondence with approved indications, and each prescription.
Subsequently, ***hospital pharmacists*** register each individual dispensation.

At the end of the therapy, physicians need to report patient's outcome.

Purpose

To compare baseline characteristics and outcomes of clinical trials' patients with the one of a cohort of patients treated with new drugs for renal cell carcinoma, sorafenib and sunitinib, in the Veneto Region (North East of Italy, 4.9 million inhabitants).

Materials and Methods

Pivotal clinical trials for ***sorafenib*** and ***sunitinib*** for the indication "renal cell carcinoma" were selected.
Data of the Veneto Region patients treated with sorafenib and sunitinib were extracted from the oncoAIFA register for the period January 2007-March 2011.

Baseline characteristics were compared between clinical trials and clinical practice: ***gender, age, ECOG performance status, number of metastatic organs.***
The outcome compared was the proportion of patient with disease progression or death.

RESULTS

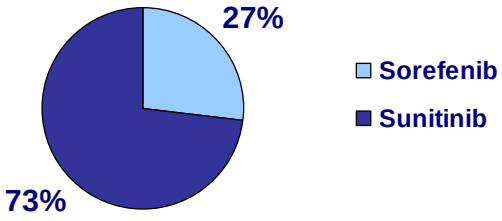


Fig.1: Patients treated In the Veneto Region with sorafenib [209] and sunitinib [570]

Sorafenib: baseline characteristics were similar for **gender** (% male: 70% RCT, 70% register), **ECOG performance status** (% ECOG zero: 49% RCT, 49% register). Relevant differences were found for **age** (median 58 years RCT, 67 years register), number of **metastatic sites** (% > 2: 57% RCT, 27% register), and **previous cytokines use** (% yes: 83% RCT, 57% register) (Fig. 2,3).

Sunitinib: **gender** (% male: 71% RCT, 69% register), **median age** (62 years RCT, 66 years register), and **ECOG performance status** (% ECOG zero: 62% RCT, 56% register) were similar, while the two populations greatly differ for number of **metastatic sites** (% of >= 3: 57% for RCT, 18% for register) (Fig.2,4)

Fig. 2

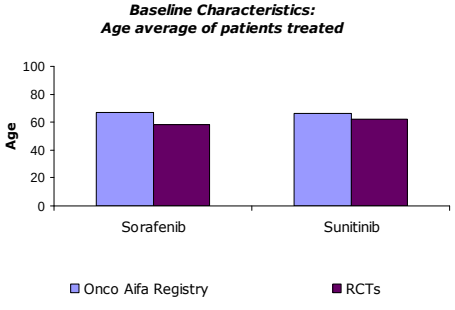


Fig. 3

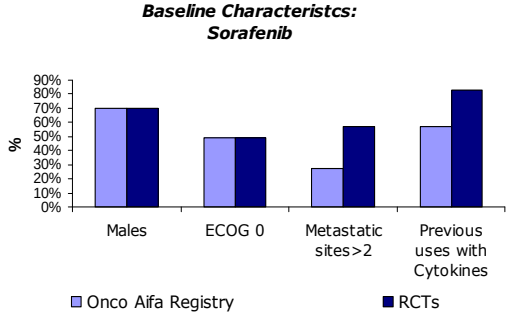


Fig. 4

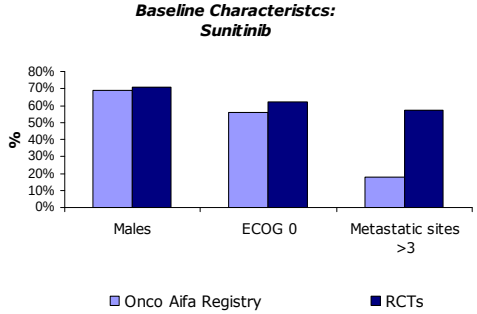
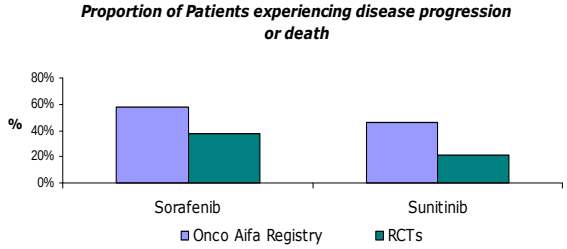


Fig. 5



38.1% of patients experienced disease progression or death in the sorafenib trial vs. 58% in real life (this proportion was 21% in the sunitinib trial vs. 46% in the register.

Conclusions

Although approved indications for new drugs often resemble RCT patients' characteristics, patients treated in clinical practice differ from the study populations. This difference is also described in patients' outcome (Fig.5).

References :

[1]Escudier B. et al. *N Engl J Med* 2007; 356:125-34.
[2]Motzer RJ et al. *N Engl J Med* . 2007; 356: 115-24.