# EVALUATION OF PREDICTIVE BIOMARKERS OF CHEMORADIOTHERAPY (CRT) RESPONSE IN PATIENTS WITH ESOPHAGEAL CANCER (EC) TREATED AT NATIONAL CANCER INSTITUTE (NCI)

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## INTRODUCTION

Esophageal cancer (EC) is one of the most common and lethal neoplams in Brazil (Fig 1). Diagnose is often made in advanced stages, resulting in unfavorable prognosis. In the 40's, surgical ressection became the gold standard treatment, with 15 to 40% global cure index. However, in advanced stages this index is less than 5%. Therefore, new treatments were pursuit without success, until 2012 when was published the CROSS trial. This trial was a watershed in EC treatment, because was the first to show benefit, with neoadjuvant CRT, in 5 year overall survival of 63%, becoming the gold standard in EC treatment nowadays. Nevertheless, EC has a bad prognosis and need new treatments to improve overall survival. One of the possibilities, is to identify which patients would benefit of neoadjuvant CRT, once the early detection of non-responders will allow to institute an alternative therapy, avoiding this way the subtreatment and as well the overtreatment. This way, detection of predictive biomarkers of CRT response becomes relevant to optimize EC treatment.

## METHODS AND RESULTS

We gone a analyze pre-treatment biopsies of patients inserted in QUIMERA protocol (Fig 2), in which EC patients are treated with induction CT (Carboplatin + Taxol), followed by neoadjuvant CRT (Carboplatin + Taxol + 45Gy RT), and after 6-10 weeks surgery is done.

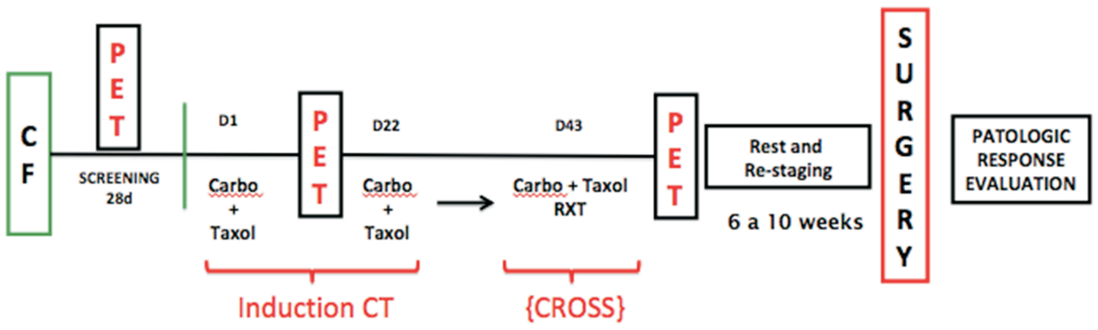


Fig 2. QUIMERA PROTOCOL scheme

CRT response, evaluated in surgical specimen, will be classified according to the Guideline for Clinical and Pathologic Studies on Carcinoma of the Esophagus of Japanese Society of Esophageal Diseases: complete response (CR), partial response (PR), stable disease (SD) and disease progression (DP). To compare patients will be divided in 2 groups: Responders (Rp = CR + PR) and non-Responders (nRp = SD + DP). Therefore, biopsies of these both groups will be submitted to a large-scale analysis using DNA microarray, to define the molecular profile of Responders and non-Responders ESCC patients.

Until now, study recruited 15 patients, 8 male and 7 female, 4 adenocarcinomas and 11 squamous cell carcinoma, 7 already have surgery, with 7 Rp and 2 nRp, as show in Table 1.

**Sources of financial: FAPERJ, Swiss Bridge Foundatin, INCA/MS**

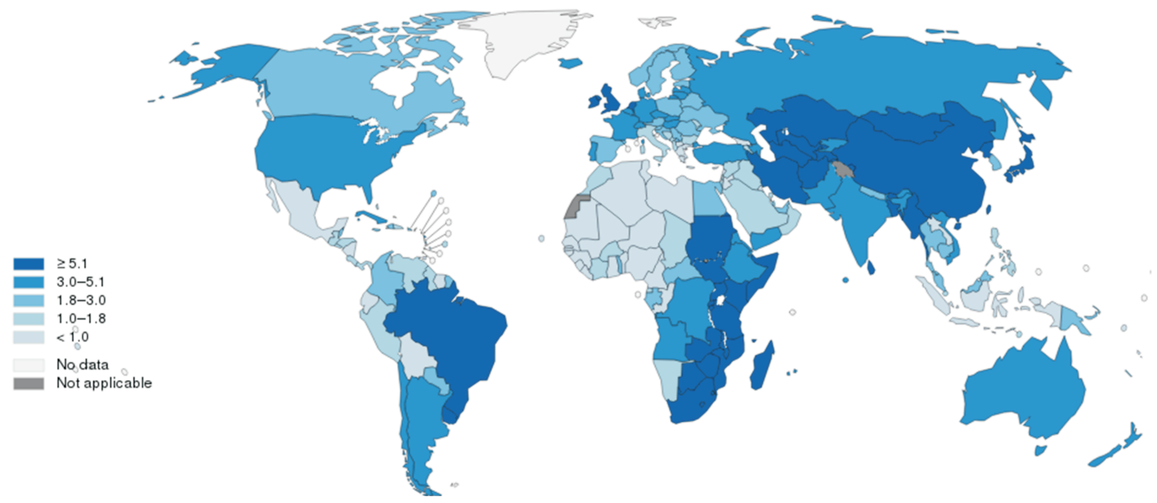


Fig 1. Esophageal Cancer Incidence in the world. IARC – World Cancer Report 2016

Table 1. Patients characteristics

| | |
|---|---|
| **Patients** | N = 15 |
| **Operated** | 7 |
| **CRT in course** | 8 |
| **Sex** | |
| **Male** | 8 |
| **Female** | 7 |
| **Age in years (avarage)** | 60,4 |
| **Histopatological Type** | |
| **Adenocarcinoma** | 4 |
| **SCC** | 11 |
| **Response after CRT** | |
| **CR** | 4 |
| **PR** | 3 |
| **SD** | 2 |
| **DP** | 0 |
| **Rp** | 7 |
| **nRp** | 2 |
| **Staging (ypTNM)** | |
| **0** | 4 |
| **IIB** | 1 |
| **IIIA** | 1 |
| **IIIC** | 1 |

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**Projeto Gráfico: Setor de Edição e Informação Técnico-Científica / INCA**

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