

# Increased Compliance with Tumor Treating Fields (TTFields) is Prognostic for Improved Survival in the Treatment of Glioblastoma: A Subgroup Analysis of the EF-14 Phase III Trial

Steven A. Toms MD MPH FAANS FACS; Zvi Ram

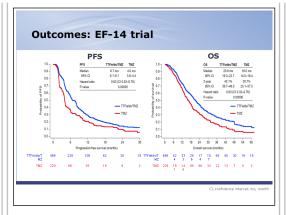
The Departments of Neurosurgery of Lifespan Health System, Warren Alpert Medical School of Brown University, Providence, RI, USA and the Tel Aviv Medical Center. Tel Aviv, Israel

#### Introduction

Tumor treating fields (TTFields) is an antimitotic therapy comprising low intensity alternating electric currents delivered non-invasively to the tumor region. The EF-14 phase 3 trial [NCT00916409] in newly diagnosed glioblastoma showed that TTFields plus temozolomide (TTFields/TMZ) improved progression-free (PFS) and overall survival (OS) versus TMZ alone; 75% of patients achieved compliance of 75% (=18 hours/day). We analyzed how rates of compliance with TTFields/TMZ correlated with PFS and OS in the EF-14 trial.

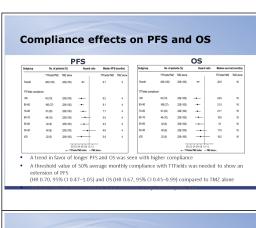
### **Methods**

Compliance was assessed using daily usage data from the NovoTTF-100A (Optune®) computerized log file. Compliance was calculated as %/24-hour period of TTFields delivery. Patients on TTFields/TMZ were segregated into subgroups by % daily compliance: 0 - =30%, 30% -=50%, 50% - =60%, 60% - =70%, 70% - =80%, 80% - =90%, 90% -=100%. A Cox model controlled for sex, extent of resection, MGMT methylation status, age, region, and performance status.

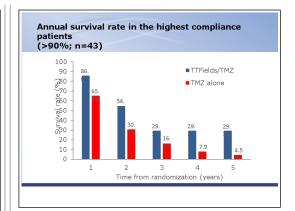


### Results

A threshold value of 50% average daily compliance with TTFields was needed to extend PFS (HR 0.70 95%CI 0.47-1.05) and OS (HR 0.67 95%CI 0.45-0.99) versus TMZ alone. A trend in favor of longer PFS and OS was seen with higher compliance bins (>90% compliance: PFS HR 0.54 95%CI 0.37-0.79; OS HR 0.52 95%CI 0.35-0.79). At compliance >90% median survival was 24.9 months (28.7 months from diagnosis) and 5-year survival was 29.3%. Compliance was independent of gender, extent of resection, MGMT methylation status, age, region and performance status (HR 0.78; p=0.031; for OS at compliance =75% vs <75%).



PFS					OS						
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Overall	450 (100)	229 (100)	+	6.7	4	Overall	453 (100)	229 (100)	+	20.9	16
TTFields comp	úarra.					TTFields-congl	ianne				
-90	43.02	229 (100)	-	82		-90	43 (10)	229 (100)	-	24.9	18
80-90	166 (37)	229 (100)	+	8.1	4	80-90	168 (37)	229 (100)	+	21.5	16
70-80	91 (20)	229 (100)		7.7	4	70-80	91 (20)	229 (100)		21.7	16
60-70	45 (10)	229 (100)		5.4	4	60-70	45 (10)	229 (100)		19.9	16
50-60	42(8)	229 (100)		42		50-60	42 (9)	229 (100)		18	16
30-50	42(8)	229 (100)	-+-	- 4.8		30-60	40(0)	229 (100)	-+-	17.9	16
s30	22 (5)	229 (100)		5.9	4	s30	22 (5)	229 (100)	-+	18.2	16
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A tr	rend in fa	vor of I	onger PF	S and OS	S was si	een with h	igher coi	mpliand	e		
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## Conclusions

A compliance threshold of 50% with TTFields/TMZ treatment correlated with significantly improved outcomes in OS and PFS versus TMZ alone. A trend in favor of longer PFS and OS was seen at higher compliance rates (90%). Increased compliance with TTFields therapy is prognostic for improved survival in glioblastoma.

# Learning Objectives

By the conclusion of this session, participants should be able to: 1) Describe the importance of compliance in athe application of tumor treating fields, 2) Discuss, in small groups, threshold and effective compliance levels, 3) Identify an effective treatment for glioblastoma.