Using digital tools for the early identification and monitoring of regorafenib-associated hand-foot skin reactions in real-life setting: The FACET study

C. Maillard[1], V. Sibaud[2], M. Di Palma[3], A. Costa1[1] M. Kremliovsky[4], E. Dochy[5], M. Pawelzik[6], P. Twumasi-Ankrah[7], P. Rondi[9], P. Arvis[9], I. Benbouta[9], J.-B. Colin[9], T. Leturgez[9], H. Djuidje Kamdem[10], R. Coriat[11]

Affiliations

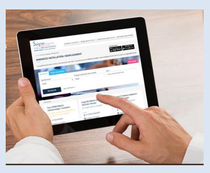
[1] IQVIA France, La Defense, France; [2] Cancer University Institute, Toulouse, France, [3] Gustave Roussy, Villejuif, France; [4] Bayer Global Medical Device & eHealth, Whippany, USA; [5] Bayer Global Medical Affairs, Diegem, Belgium; [6] ClinStat GmbH, Huerth, Germany; [7] Bayer Global Medical Statistics, Whippany, USA; [8] Bayer Data Generation Management & Quality, Whippany, USA; [9] Bayer Medical Affairs, Lille, France; [10] Bayer Global Research & Development, Berlin, Germany; [11] Cochin University Hospital, Paris, France

Introduction

Hand-foot skin reaction (HFSR) is a common skin toxicity associated with chemotherapy, including therapy with multi-kinase (MKI) and BRAF inhibitors (1). HFSR is characterized by painful skin lesions that can interfere with everyday activities, such as walking or gripping objects. The burden of these symptoms can result in compromised health-related quality of life (HRQL) and can thus pose the risk of treatment interruption or withdrawal, or dose reduction (2). There is thus a need for prompt identification of the initial symptoms of HFSR and earlier management, which could improve quality of life.

Objectives

- FACET is a multicenter, prospective, interventional study that aimed to investigate the **feasibility and usability** of electronic collection devices for early detection of HFSR in patients undergoing regorafenib therapy (3).
- The aim of this real world, non-comparative study was to measure adherence to data collection, assessing feasibility and compliance with the tools.

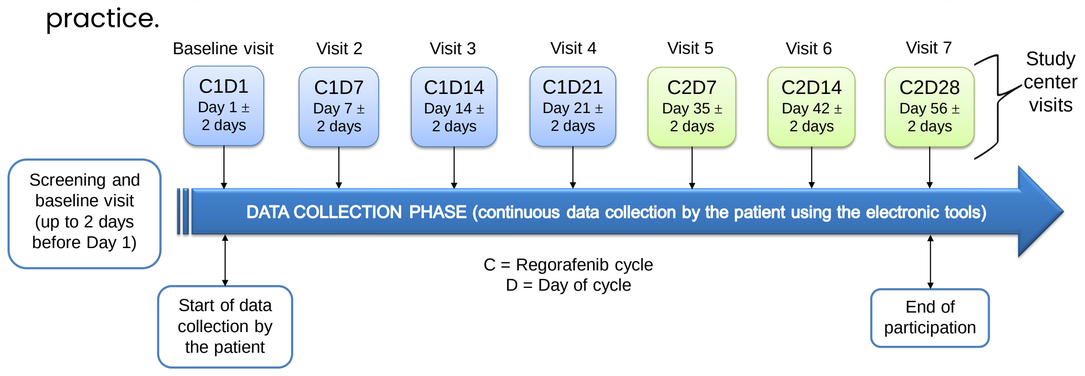


Tablet with camera

Electronic insoles

Study design

- Patients initiating regorafenib treatment for metastatic colorectal cancer (mCRC) were enrolled from 8 specialist centers across France. Eligible patients were provided with an electronic tablet with an application that administered HFS-14, EQ-5D-5L, FSS and VAS questionnaires, a camera to photograph their hands and feet, and electronic insoles to collect daily activity information (see right-hand panel).
- Two 28-day data collection periods were scheduled corresponding to 2 cycles of their regorafenib treatment, which was administered according to local practice.



Patient assessments

The intervention consisted of the following tools and assessments:

Patient-reported outcomes (PRO) administered by tablet:

- Hand-foot Syndrome-Specific quality of Life (HFS-14)
- EuroQol Group 5-Dimension-5-Level quality of life (EQ-5D-5L)
- Fatigue severity scale (FFS)
- Visual analogue scale (VAS)

Electronic devices:

- Tablet with integrated camera to capture images of affected skin
- Electronic insoles to capture data on patient physical activity

Results

Patient characteristics:

➔A total of 38 regorafenib-treated patients were included (55% male, median age 65 years; Table 1)

➔16 of the patients reported onset of HFSR during the study and were classified as HFSR-positive.

	HFSR-positive (N=16)	HFSR-negative (N=22)	ITT population (N=38)
Age at baseline (years)			
Mean (SD)	60.5 (13.96)	64.4 (8.97)	62.8 (11.33)
Median	61.5	65.5	65.0
Range	29, 86	42, 80	29, 86
Age at baseline (years), n(%)			
<65	8 (50.0)	11 (50.0)	19 (50.0)
≥65	8 (50.0)	11 (50.0)	19 (50.0)
Sex, n(%)			
Male	8 (50.0)	13 (59.1)	21 (55.3)
Female	8 (50.0)	9 (40.9)	17 (44.7)
Performance status (ECOG), n(%)			
Fully Active	10 (62.5)	6 (27.3)	16 (42.1)
Restricted Active	4 (25.0)	12 (54.5)	16 (42.1)
Ambulatory and capable of all self-care	2 (12.5)	4 (18.2)	6 (15.8)
Capable of limited self-care	0	0	0
Completely disabled	0	0	0

Table 1. Patient characteristics at baseline.

Safety:

➔34 of the 38 patients (90%) experienced 1 or more adverse event, of which 74% were regorafenib-related (Table 2)

➔2 patients experienced insole-related adverse events.

	Number of patients, n(%)	Number of events
Any AE	34 (89.5)	186
Any SAE	9 (23.7)	13
Any AE related to Regorafenib	28 (73.7)	95
Any AE related to the insole device	2 (5.3)	2
*Palmar-plantar erythrodysesthesia syndrome**	1 (2.6)	1
Pruritus	1 (2.6)	1
Any AE related to the electronic tablet	0	0

Table 2. Overall summary of AEs and SAEs related to regorafenib and the study intervention in the SAF population (N=38).
* Patient with HFSR.

Compliance with intervention:

➔Over the whole study, compliance with the tools and assessments was generally similar for HFSR-positive or HFSR-negative patients (Figure 1)

➔None of the patients in the study achieved high compliance (>80% PRO completion or use of study tools) overall.

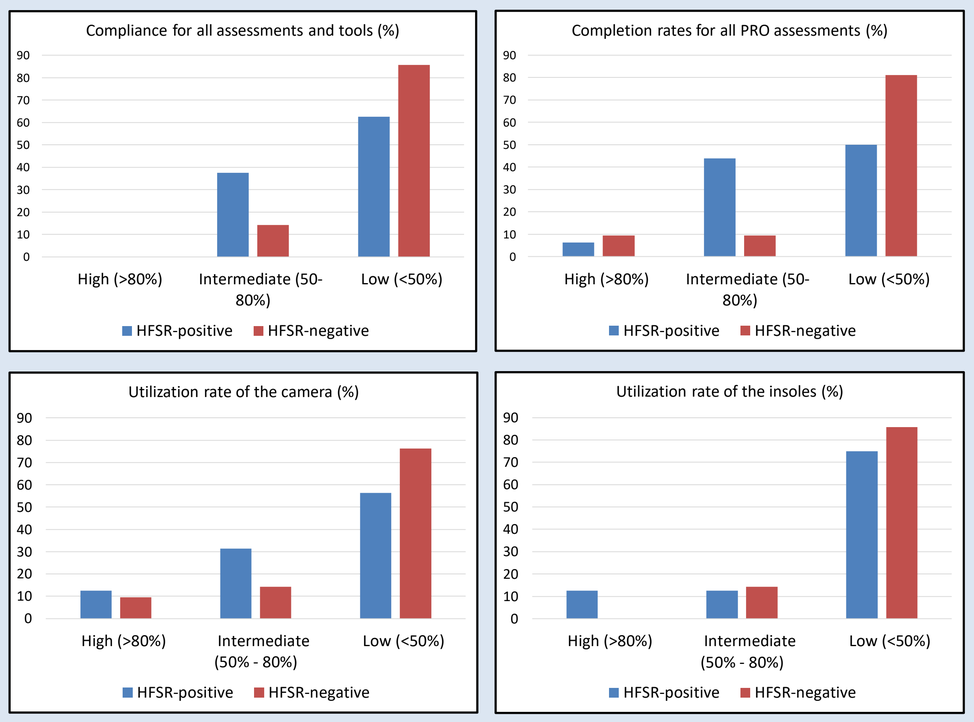


Figure 1. Compliance with study tools and assessments (ePRO, Imaging and Insoles) over the entire study period.

Study tool discontinuation:

➔Early discontinuation rates were 44% and 55% for HFSR and non-HFSR patients respectively, while the median time from baseline to early study tool discontinuation was 44.0 days and 21.5 days

➔The most common reasons for discontinuation were unwillingness to continue use (42.1%) or an adverse event related to the intervention or not (26.3%).

Conclusion

➔High compliance with intervention tools and questionnaires was rarely achieved among the patients and around half discontinued use of the tools before the end of the study.

➔Nevertheless, AEs related to the study tools were minimal and patient provision with the tools therefore has the potential to improve the management of HFSR, aiding compliance with regorafenib treatment.

Presented at the ISPOR Congress 2024 - November 17th-21st, 2024 - Barcelona, Spain

References

1. Lacouture ME, Reilly LM, Gerami P, Guitart J. (2008) *Ann Oncol* 19(11): 1955–61.
2. Haley AC, Calahan C, Gandhi M, West DP, Rademaker A, Lacouture ME. (2011) *Support Care Cancer* 19(4): 545–54.
3. Coriat R, Sibaud V, Bourgeois V, Manfredi S, Artru P, Trouilloud I, Kremliovsky M, Arvis P, Di Palma M. (2023) *Digest Liver Disease* 55(8): 1019–25.

This study was supported by Bayer HealthCare France and registered under the French Health Authority (ANSM) registry number ID-RCB 2020-A03080-39.