

Increasing Adherence to Oral Tacrolimus Using a Medication Reporting Intervention



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Introduction and Purpose

Medication non-adherence can be detrimental for persons who undergo Allogeneic-Stem Cell Transplant (allo-SCT).

Purpose: Increase adherence to oral tacrolimus by implementing a medication reporting intervention

Aims

Project aims, for persons undergoing allo-SCT who were between 15- and 90-days status post SCT, with follow up appointments with Quality Improvement (QI) project leader in SCT-Ambulatory Treatment Center (ATC), were to:

- Aim 1:** Achieve oral tacrolimus medication adherence of 95% or greater
- Aim 2:** Increase patient satisfaction of 85% or more, reporting satisfied or very satisfied with the perceived support related to promoting medication adherence
- Aim 3:** Achieve patient satisfaction of 85% or more, reporting satisfied or very satisfied with the medication grid
- Aim 4:** Assess adherence to using the medication grid for the medication reporting intervention

Methods

Design: QI project; pre-post historical and a pre-post within intervention group design

Setting: Single unit outpatient SCT ATC within large comprehensive cancer center in Southwest, US

Sample inclusion criteria

- Allo-SCT patients between 15 and 90 days post allo-SCT, n=16; historical group n=19 participants
- Oral tacrolimus drug
- Follow up appointments with project leader in SCT-ATC

Sample exclusion criteria: hospital readmission

Intervention

Medication List

START taking these medications

	Morning	Afternoon	Evening	Bedtime	As Needed
<p>tacrolimus 0.5 mg capsule Commonly known as: PROGRAF Take 1 capsule (0.5 mg) by mouth every 12 (twelve) hours.</p>	<p>✓</p> <p>1 capsule = 0.5 mg Take AM dose after labs drawn.</p> <p>4/20 8:00am 4/21 8:10am 4/22 8:00am 4/23 8:15am 4/24 9:00am 4/25 9:10am 4/26 9:15am</p>			<p>✓</p> <p>1 capsule = 0.5 mg To prevent GVHD. Separate AM and PM dose by 10-12 hours.</p> <p>4/20 8:00pm 4/21 8:10pm 4/22 8:00pm 4/23 8:15pm 4/24 9:00pm 4/25 9:10pm 4/26 9:15pm</p>	

Medication reporting intervention

Results

Aim 1a and 1b

Table 2. Tacrolimus Level Analysis Pre and Post Intervention

Tacrolimus adherence goal range: yes or no		Pre-intervention N(%) Historical	Post-intervention N(%)	P-value
W2D1	No	10 (52.6%)	5 (31.3%)	0.20
	Yes	9 (47.4%)	11 (68.8%)	
W2D2	No	3 (15.8%)	3 (18.8%)	1.00
	yes	16 (84.2%)	13 (81.3%)	
W4D1	No	3 (16.7%)	5 (31.3%)	0.43
	Yes	15 (83.3%)	11 (68.8%)	
W4D2	No	6 (33.3%)	2 (12.5%)	0.23
	Yes	12 (66.8%)	14 (87.5%)	
Overall	No	14 (73.7%)	8 (50%)	0.15
	Yes	5 (26.3%)	8 (50%)	

W=week; D=day

Fisher's exact (expected cell counts less than 5): W2D2, W4D1, W4D2

Chi Square (expected cell count of 5 or more): W2D1 and overall

Morisky Medication Adherence Scale-8

- Score: range 0-8; adherence level: 8=high, 7-6=medium, <6=low
- Median summary score: **-pre 8 (IQR=1.1); post 7.9 (IQR=1.1); difference 0 (IQR=1.2)**
- Wilcoxon Signed-Rank Test: not statistically significant ($p=0.77$)

Aim 2

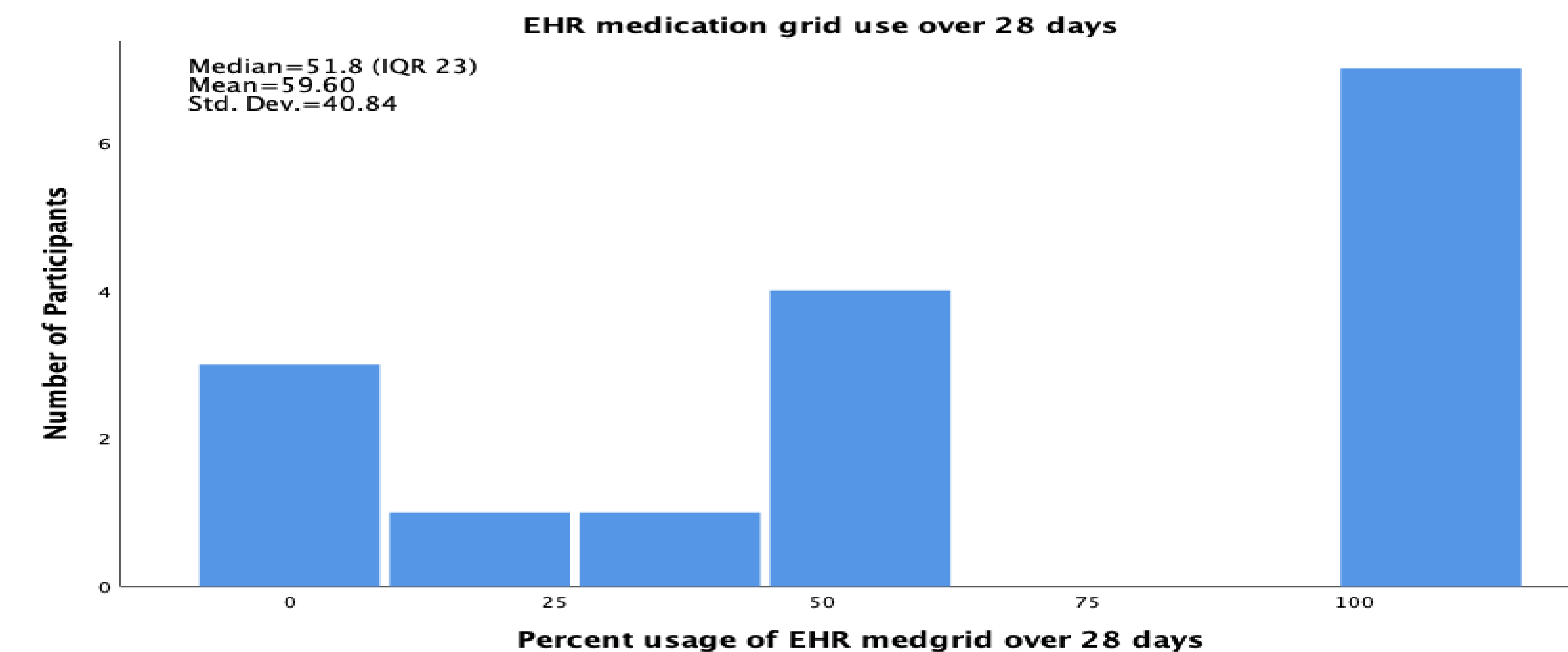
Patient Satisfaction Survey

- Assess confidence, resources, and support with promoting adherence
- Higher scores=higher satisfaction
- Median summary score: **-pre 4.5 (IQR=3.0); post 15 (IQR=0.0); difference 0 (IQR=2.0)**
- Wilcoxon Signed-Rank Test: not statistically significant ($p=0.07$)

Aim 3

Question	Response	n	%
Medication grid helped me keep track of my tacrolimus	Disagree	1	8.3%
	Agree	1	8.3%
I would continue using the medication grid after discharge	Strongly Agree	10	83.3%
	Disagree	2	16.7%
	Agree	3	25%
I would recommend using the medication grid to other patients	Strongly agree	7	58.3%
	Disagree	0	0%
	Agree	2	16.7%
I would continue using the medication grid after discharge	Strongly agree	7	58.3%
	Disagree	0	0%
I would recommend using the medication grid to other patients	Strongly Agree	10	83.3%
	Disagree	0	0%

Aim 4



Discussion

- Intervention well received: 91.6% satisfaction, >50% adherence to intervention tool
- Ceiling effect related to high baseline medication adherence and satisfaction scores
- Benefits of educational interventions over 4-8 weeks versus one session at time of discharge: greater knowledge and retention
- Lower GVHD occurrence, hospital re-admissions, and deaths in intervention group

Limitations

- Sample size not large enough to detect statistically significant differences
- Did not control for confounding variables such as age, diagnosis, number of SCTs, type of SCT, transplant regimen, or co-morbidities
- Bias of survey results due to recall or social desirability bias
- Intervention helped with medication tracking but did not help with reminders
- Duration of intervention over 4-8 weeks; likely would be most beneficial over 6 months or entire duration of tacrolimus treatment

Conclusion

- Findings highlight that participants want to be adherent and are looking for an easy tool to integrate into their everyday lives
- This pre-post design QI project is among the first of its kind using an EHR medication grid for medication reporting or medication journaling
- Intervention is low- technological, low-cost, causes minimal changes to workflow, and is easily replicated.
- Need for further studies

References: see reference list. Contact: Asha Demla Email: ashademla@gmail.com