Effect of medication recommendations generated with a decision support system on appropriate prescribing in older people in the pre-operative setting

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Background. The Systematic Tool to Reduce Inappropriate Prescribing' (STRIP) is incorporated into a clinical decision support system: STRIP Assistant (STRIPA). Aim: evaluate recommendations for optimizing polypharmacy generated using STRIPA on appropriate prescribing and mortality in pre-operative setting.

Method. A cluster randomized controlled trial in a pre-operative geriatric outpatient clinic (2014-2016). Intervention: pharmacotherapeutic recommendations generated by a research physician using STRIPA (STRIPA+) handed to the resident prior to Comprehensive Geriatric Assessment (CGA). Outcome 1: Number of effectuated 'Potentially Prescribing Omissions' (PPOs), 'Potentially Inappropriate Medications' (PIMs) and dosing adjustments by resident. Outcome 2: three months post-operative mortality.

Results. 34 clusters with 65 intervention and 59 control patients were included. The numbers of effectuated PPOs and PIMs by the resident were higher in the intervention group (PPOs 26.2% versus 3.4%; p<0.01, PIMs 46.2% versus 15.3%; p<0.01). The effectuated dosing adjustments and three months postoperative mortality did not differ.

Average number of PPOs (A), PIMs (B) and dosing adjustments (C) per patient
*p<0.01 (Mann Whitney U)
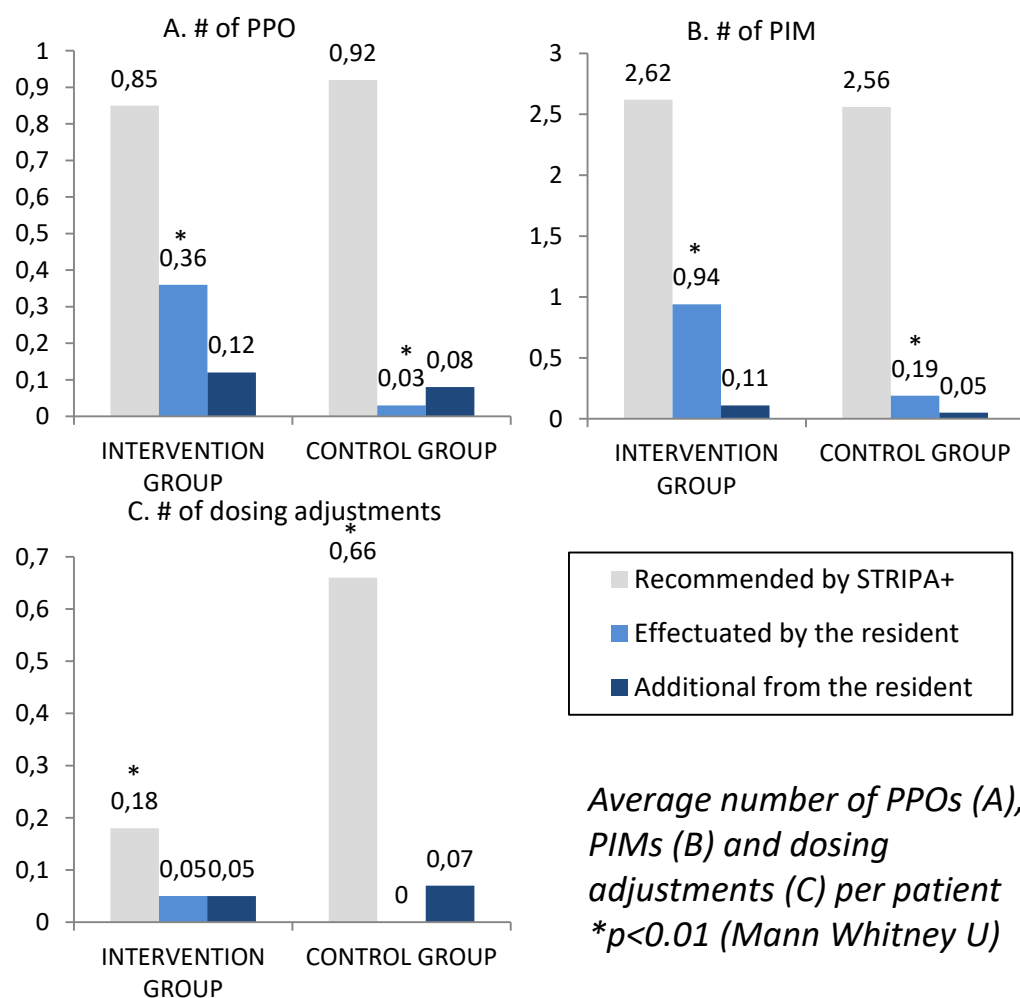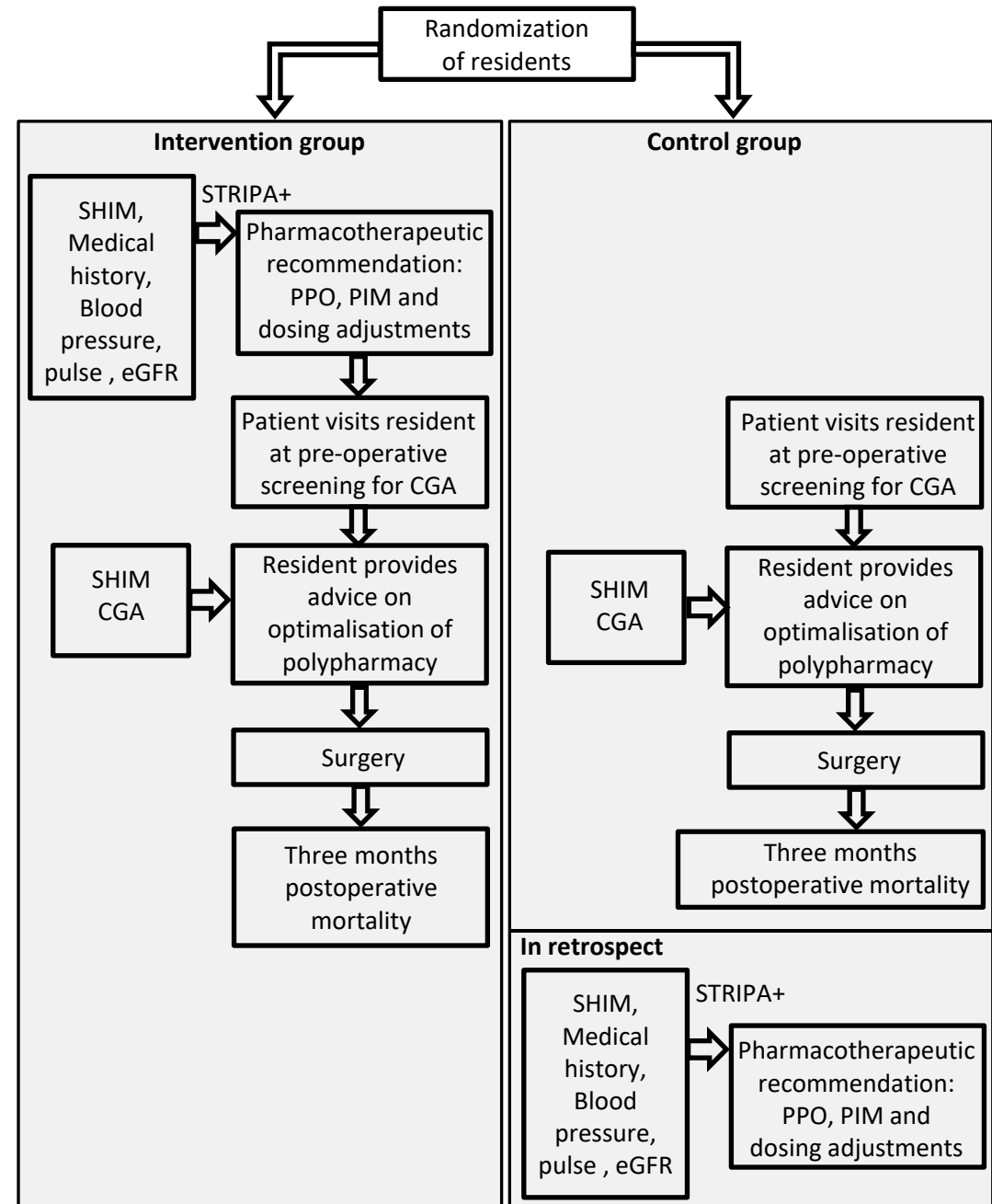
	Intervention group n=65	Control group n=59	p
A. # of PPOs per patient (%)			<.01[a]
0	48 (73.8)	57 (96.6)	
1	11 (16.9)	2 (3.4)	
2	6 (9.2)	0	
B. # of PIMs per patient (%)			<.01[a]
0	35 (53.8)	50 (84.7)	
1	14 (21.5)	8 (13.6)	
2	8 (12.3)	0	
≥ 3	8 (12.3)	1 (1.7)	
C. # of dosing adjustments per patient (%)			.096[a]
0	62 (95.4)	59 (100)	
1	3 (4.6)	0	
Mortality 3 months postoperatively, n (%)	8 (13.1)	7 (12.1)	.084[b]

Average number of PPOs, PIMs, dosing adjustments effectuated by resident and mortality in intervention versus control group .
[a] P based on Mann Whitney U
[b] P based on generalized estimating equations analysis. Adjusted for age, sex, and Charlson comorbidity index at screening

Conclusion. Providing residents with recommendations to optimize polypharmacy using STRIPA in a pre-operative geriatric outpatient clinic improves appropriate prescribing, no difference in three months postoperative mortality was found.