

# FLAVONOIDS AND POST HAEMORRHOIDECTOMY RECOVERY: A SYSTEMATIC REVIEW AND META-ANALYSIS

Dr Renato Pitesa<sup>1,2</sup>; Dr Wai Yan (Rachel) Yuen<sup>1</sup>; Prof. Andrew G. Hill<sup>1,2</sup>

<sup>1</sup>Department of general surgery, Middlemore Hospital; <sup>2</sup>Department of surgery, The University of Auckland

## Flavonoids may reduce post-haemorrhoidectomy pain



### INTRODUCTION

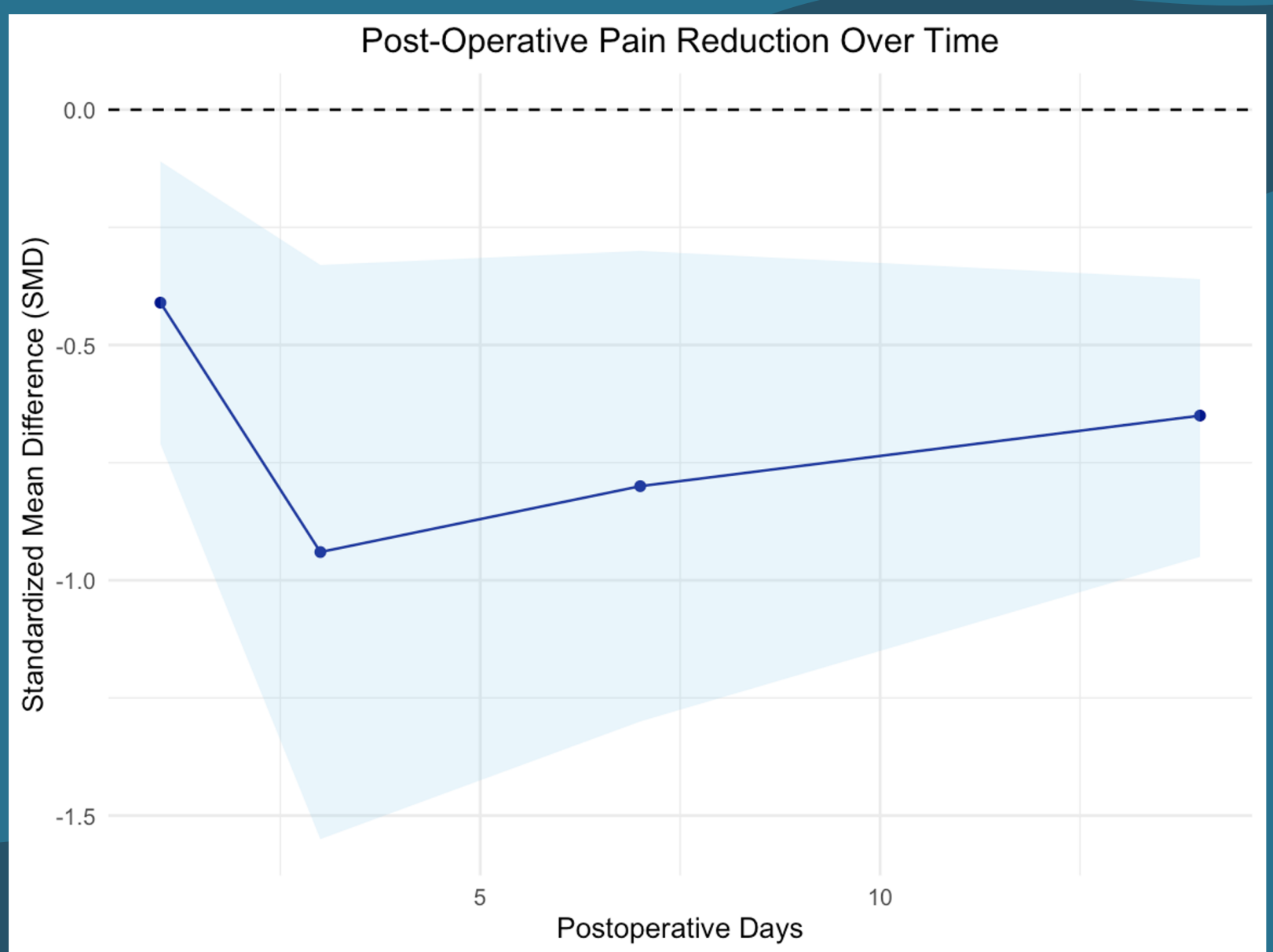
- Haemorrhoidectomy is the gold standard for definitive treatment of high-grade symptomatic haemorrhoids **BUT** is often associated with substantial pain.
- This systematic review explores the potential of flavonoids in alleviating the postoperative symptom burden following excisional haemorrhoidectomy



### MATERIALS and METHODS

- A systematic review of the literature was conducted according to Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines (PROSPERO CRD42023472711).
- Randomized controlled trials (RCTs) published in PubMed, MEDLINE, Embase, and Scopus from inception to 1st December 2023 were retrieved. The primary outcome investigated was post-operative pain. Meta-analysis was performed using Review Manager version 5.4.1.

Linear plot of standardized mean difference in pain at varying POD



Sensitivity analysis for common flavonoids included in this review

Study or Subgroup	Flavonoids			Control			Weight	Std. Mean Difference IV, Random, 95% CI	Year	Std. Mean Difference IV, Random, 95% CI
	Mean	SD	Total	Mean	SD	Total				
<b>1.2.1 MPFF</b>										
Colak 2003	1.63	2.28	56	3.1	1.52	56	19.4%	-0.75 [-1.14, -0.37]	2003	
La Torre 2004	0.24	0.44	25	1.36	0.57	25	15.3%	-2.17 [-2.87, -1.46]	2004	
<b>Subtotal (95% CI)</b>			<b>81</b>			<b>81</b>	<b>34.7%</b>	<b>-1.43 [-2.81, -0.04]</b>		
Heterogeneity: Tau <sup>2</sup> = 0.91; Chi <sup>2</sup> = 11.78, df = 1 (P = 0.0006); I <sup>2</sup> = 92%										
Test for overall effect: Z = 2.02 (P = 0.04)										
<b>1.2.2 Diosmin monotherapy</b>										
Ba-Bai-Ke-Re 2011	1.11	3.91	43	3.12	3.91	43	18.9%	-0.51 [-0.94, -0.08]	2011	
De Luca 2012	2.8	1.42	30	3.03	1.42	30	17.9%	-0.16 [-0.67, 0.35]	2012	
<b>Subtotal (95% CI)</b>			<b>73</b>			<b>73</b>	<b>36.8%</b>	<b>-0.36 [-0.70, -0.02]</b>		
Heterogeneity: Tau <sup>2</sup> = 0.00; Chi <sup>2</sup> = 1.06, df = 1 (P = 0.30); I <sup>2</sup> = 6%										
Test for overall effect: Z = 2.09 (P = 0.04)										
<b>1.2.3 Rutin-related compounds</b>										
Rabelo 2020	3.65	1.21	17	6.85	3.64	17	15.0%	-1.15 [-1.88, -0.42]	2020	
Chiaretti 2020	3.06	3.44	10	3.63	2.18	12	13.6%	-0.19 [-1.04, 0.65]	2020	
<b>Subtotal (95% CI)</b>			<b>27</b>			<b>29</b>	<b>28.6%</b>	<b>-0.70 [-1.63, 0.24]</b>		
Heterogeneity: Tau <sup>2</sup> = 0.30; Chi <sup>2</sup> = 2.83, df = 1 (P = 0.09); I <sup>2</sup> = 65%										
Test for overall effect: Z = 1.46 (P = 0.15)										
<b>Total (95% CI)</b>			<b>181</b>			<b>183</b>	<b>100.0%</b>	<b>-0.80 [-1.30, -0.30]</b>		
Heterogeneity: Tau <sup>2</sup> = 0.30; Chi <sup>2</sup> = 24.42, df = 5 (P = 0.0002); I <sup>2</sup> = 80%										
Test for overall effect: Z = 3.11 (P = 0.002)										
Test for subgroup differences: Chi <sup>2</sup> = 2.45, df = 2 (P = 0.29), I <sup>2</sup> = 18.2%										



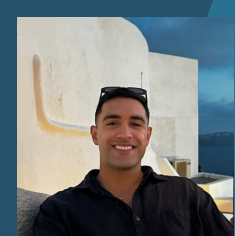
### RESULTS

- Ten articles with 775 patients were included
- Flavonoids significantly **reduced pain** (Standardized Mean Difference **-0.66** [95% confidence intervals (CI) -0.82, -0.52]; **P < 0.00001**), and **bleeding** (Odds Ratio **0.13** [95% CI 0.09, 0.19]; **P < 0.00001**)



### DISCUSSION/ CONCLUSION

- Flavonoids, MPFF specifically, show promise as a means of **reducing pain** associated with excisional haemorrhoidectomy
- Further research is required to investigate **topical** routes



Dr. Renato Pitesa MBChB



@RenatoPitesa



rpit982@aucklanduni.ac.nz