

Author (year)	Study population	Study design (RCT)	Study protocol		No. of patients		
			Study group	Control group	Total	Study group	Control group
Rongrungruang et al. 2015 [162]	Mechanically ventilated patients in the ICU	A prospective, randomized, open-label controlled trial	Probiotics once daily in the ICU	Placebo	150	75	75
Abbasi et al. 2023 [163]	Multi-trauma patients admitted to ICUs	Parallel, double-blinded, randomized, placebo-controlled trial, with a 1:1 allocation ratio	Probiotics twice daily in the ICU	Placebo	73	37	36
Anadraja et al. 2019 [164]	Mechanically ventilated patients in the MICU	A prospective, randomized, double-blind, placebo controlled trial	Probiotics twice daily in the ICU	Placebo	146	72	74
Barraud et al. 2010 [165]	Intubated adult patients under mechanical ventilation	A prospective randomized, double-blind, placebo-controlled trial	Probiotics once daily on enteral feeding in the ICU	Placebo	167	87	80
Dehghani et al. 2023 [166]	Patients who underwent their first NG tube insertion during the ICU stay were eligible	A prospective, randomized, controlled, double-blind, clinical trial	Probiotics bolus feeding	Standard feeding formula (1 kcal/mL; Entera meal)	92	44	48
Habib et al. 2020 [167]	Adult multiple trauma patients on mechanical ventilation after admission to the ICU	A single blind randomized clinical trial	Orogastric/nasogastric tube 3 times daily	Placebo	65	32	33
Johnstone et al. 2021 [168]	Adults predicted to require mechanical ventilation for at least 72 hr	A multi-center, randomized, double-blind, placebo-controlled trial	Probiotics twice daily in the ICU	Placebo	2,650	1,318	1,332
Kasiri et al. 2023 [169]	Adults critically ill patients undergoing mechanical ventilation	A single-center randomized, triple-blind, placebo-controlled clinical trial	Synbiotics twice daily in the ICU for 14 days	Placebo	80	40	40
Litton et al. 2021 [170]	Adults within 48 hr of ICU admission	A multicenter, parallel group, placebo-controlled, randomized clinical trial	Probiotics once daily in the ICU	Placebo	218	110	108
Lu et al. 2024 [171]	Adult critically ill patients who needed mechanical ventilation	A single-center randomized, double-blind, placebo-controlled trial	Probiotics twice daily in the ICU	Placebo	24	12	12
Mahmoodpoor et al. 2018 [172]	Adults critically ill patients undergoing mechanical ventilation for 48 hours	A multi-center, randomized, double-blind, placebo-controlled trial	Probiotics twice daily in the ICU for 14 days	Placebo	100	48	52
Malik et al. 2016 [173]	Adult critically ill patients requiring enteral feeding via nasogastric tube feeding alone	A prospective, randomized, double-blind, placebo-controlled trial	Probiotics twice daily on enteral feeding in the ICU	Placebo	49	24	25
Morrow et al. 2010 [174]	Adults predicted to require mechanical ventilation for at least 72 hr	A prospective, randomized, double-blind, placebo-controlled trial	Probiotics twice daily in the ICU	Placebo	138	68	70
Nazari et al. 2020 [175]	Multi-trauma patients hospitalized in a NSICU	A single blind randomized clinical trial	Probiotics twice daily in the ICU	Placebo	147	73	74

Prasoon et al. 2022 [176]	Adults critically ill patients undergoing mechanical ventilation over 48 hours	A prospective, open-label, randomized, controlled study	Probiotics twice daily in the ICU	Placebo	102	52	50
Tsilika et al. 2022 [177]	Multi-trauma patients requiring mechanical ventilation	A multi-center, randomized, double-blind, placebo-controlled trial	prophylaxis with a probiotic formula	Placebo	112	59	53
Wang et al. 2021 [178]	Patients newly admitted to RICU	A single-blind, randomized controlled trial	receive the probiotic agent	Placebo	61	28	33
Zeng et al, 2016 [179]	Critically ill adult patients (age ≥ 18 yr) with an expected need of mechanical ventilation for at least 48 h	A prospective, open-label, randomized, controlled multicenter study	Probiotics 3 times daily	Placebo	235	118	117

ICU, intensive care unit; MICU, medical intensive care unit; NG, nasogastric; NSICU, neurosurgical intensive care unit; RICU, respiratory intensive care unit.

