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The Effectiveness of the Use of Probiotics in the Prevention of Necrotizing Enterocolitis

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PATIENT CARE ISSUE

Necrotizing Enterocolitis (NEC) - Disease process in which mucosal integrity is lost, allowing the onset of infection in the bowel wall by colonizing bacteria¹¹

This gastrointestinal disease affects nearly 10% of very low birth weight (VLBW) premature infants,¹² resulting in mortality rates of 15-30%.⁴

Very Low Birth Weight (VLBW) - Includes infants born weighing <1500 grams
Probiotics - "Microbial food supplements that beneficially affect the host by improving its intestinal microbial balance,"⁶ sometimes known as "good" bacteria.

EVIDENCE-BASED PRACTICE QUESTION

Question: In very VLBW infants, does the use of prophylactic (preventative) probiotics decrease the incidence of necrotizing enterocolitis?

Population – VLBW infants

Intervention – use of prophylactic probiotics

Comparison – no use of probiotics

Outcome – prevention of necrotizing enterocolitis

REGISTERED NURSE INTERVIEWS

Interviews conducted with nurses who work in a NICU or infant nursery

- Regarding care of VLBW infants:
 - Breast milk is encouraged, Gastric residual is checked before each feeding,
 - Frequent abdominal girth measurements are taken
- Regarding the use of probiotics in the prevention of NEC:
 - No previous knowledge of this intervention

SEARCH METHODS

Databases utilized: CINAHL, Cochrane, Medline, PubMed, ScienceDirect, UpToDate

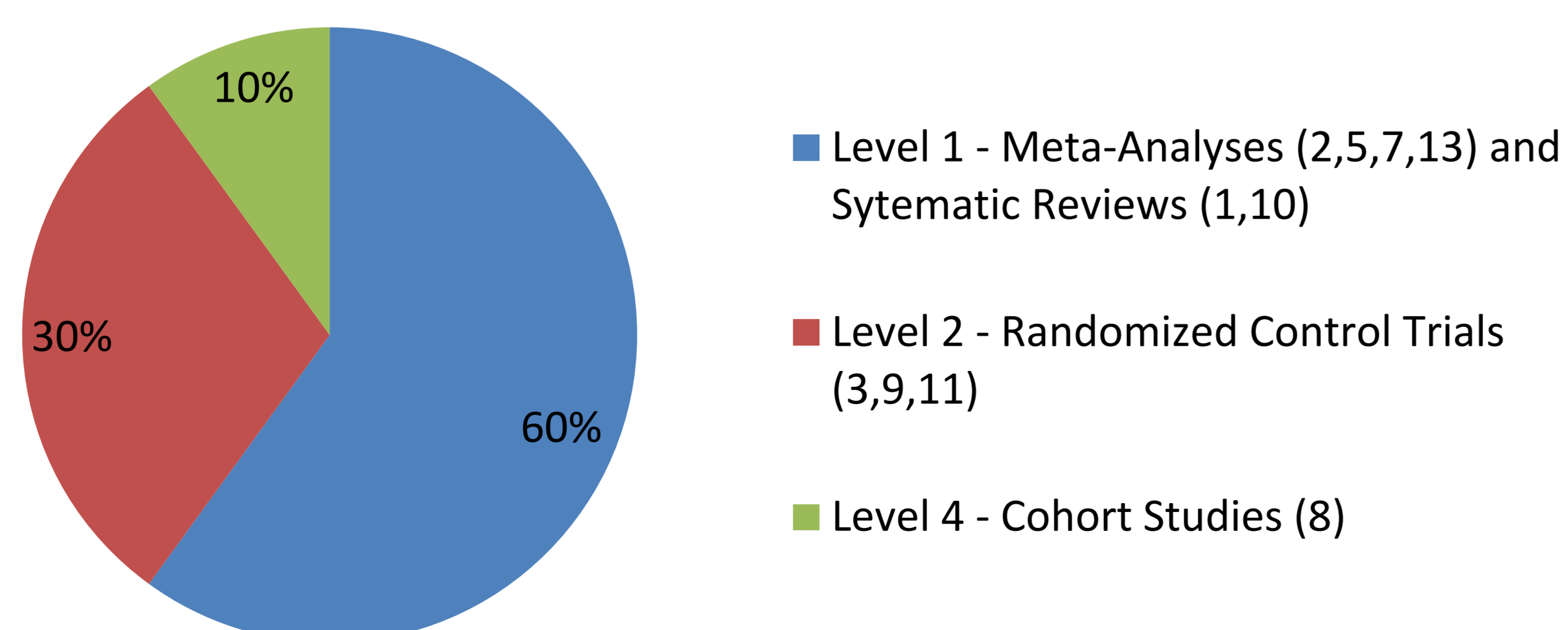
Keywords searched: Probiotics, Necrotizing enterocolitis (NEC), Prophylactic, Prevention, Nursing, Very low birth weight (VLBW), Preterm

Inclusion criteria: Probiotics being used for prevention of NEC in VLBW infants

Exclusion criteria: Published before 2008, Probiotics used as treatment, Full text not available or not in English, Extremely low birth weight (ELBW, <1000 grams) infants

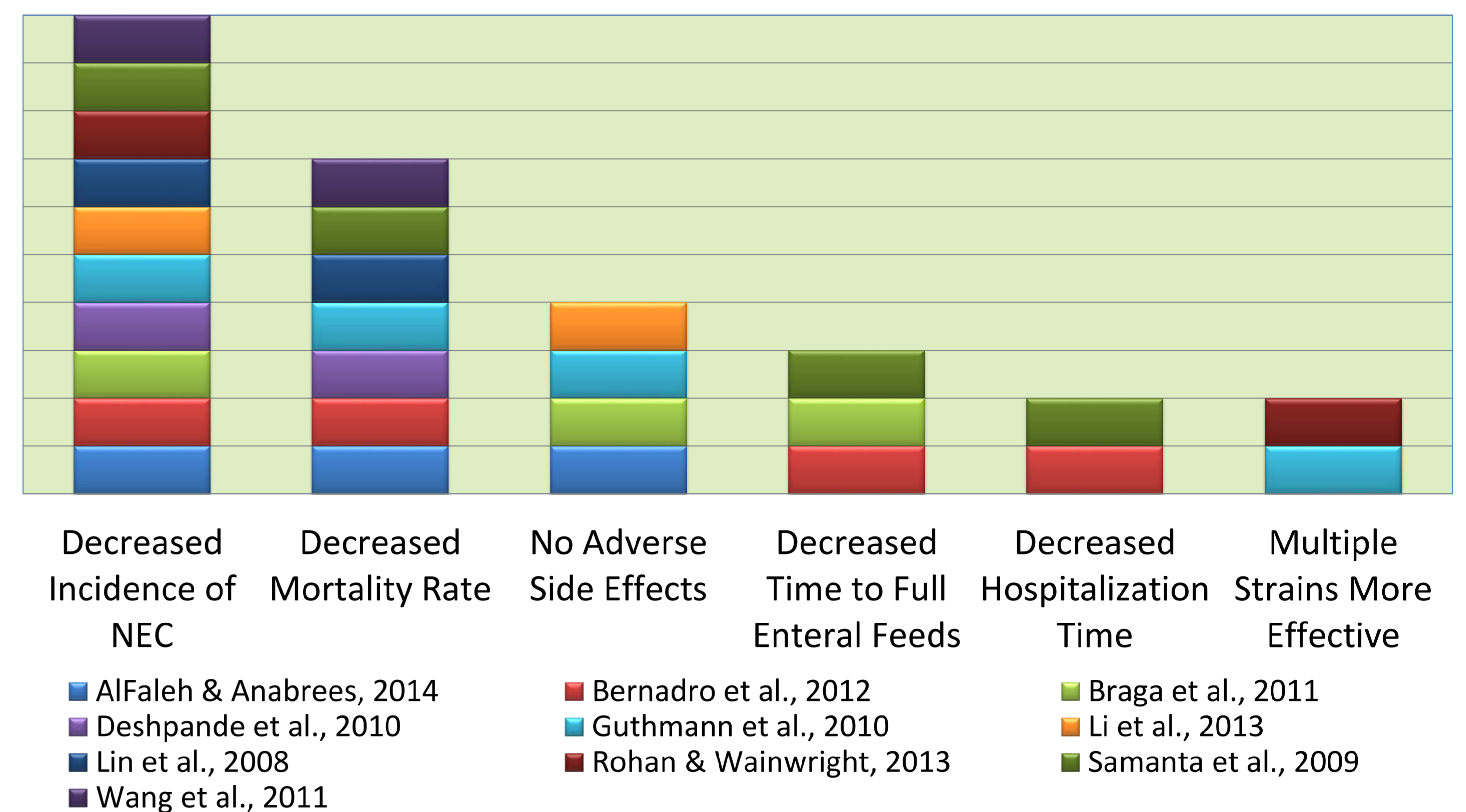
RESULTS

Levels of Evidence and Types of Articles Included



SYNTHESIS OF EVIDENCE

Specific Findings Noted in Articles



All studies reported a decrease in the incidence of necrotizing enterocolitis in response to prophylactic probiotic therapy.

EVIDENCE-BASED PRACTICE RECOMMENDATIONS

- Additional research is not needed to establish the effectiveness of probiotics in the prevention of NEC⁵
- Probiotic use should become a standard in practice among NICUs in the care of VLBW infants¹³
- Until these changes can be established, probiotics should be an informed option for parents^{1,5}

LIMITATIONS AND AREAS FOR MORE RESEARCH

Limitations:

It was difficult to compare the probiotics of each study as many types, combinations, and dosages were used, making it impossible to determine which was most effective in preventing NEC.

Areas for more Research:

- Evaluate the efficacy of specific types, dosages, and combinations of probiotics used in prophylactic treatment
- Identify the benefits of probiotic use specific to ELBW infants due to the gap in research regarding this weight classification

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