

ROLE OF LACTOFERRIN IN PREGNANT WOMEN WITH RECURRENT URINARY TRACT INFECTION

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Introduction

UTIs are the most common bacterial infection that women develop throughout pregnancy. They can arise in different components of the urinary tract, such as the bladder (cystitis), urethra (urethritis) or kidneys (pyelonephritis). Recurrent urinary tract infection (RUTI) refers to ≥ 2 infections in six months or ≥ 3 infections in one year. Interventions used to prevent RUTI in pregnant women can be pharmacological (antibiotics) or non-pharmacological (cranberry products, acupuncture, probiotics and behavioral). Lactoferrin (lactotransferrin; Lf) is an iron-binding glycoprotein and one of the most important bioactivators in milk and other exocrine secretions such as milk, saliva, tear, and nasal secretions. Several studies have shown that human lactoferrin might have anti- bacterial properties that could work on recurrent urinary tract infections.

Aim of the Work

The aim of the work was to evaluate on the role of lactoferrin (Lf) in pregnant women with recurrent urinary tract infection as a line of prevention.

Patients and Methods

This research was conducted on 220 pregnant women between 14-24 weeks gestational age with past history of recurrent urinary tract infection, no associated co-morbidities and a normal urine analysis. In this study, 110 patients were given lactoferrin, another 110 patients were control group which were selected based on randomized controlled method.

Results

For a period of four months, from December 2023 to March 2024, a total of 220 patients matched our inclusion criterias. Our data revealed that patients that were given lactoferrin were less subject to have another episode of urinary tract infection in the contrary of patients from the control group. we observed a significant increase in bacterial count(>100,000 cfu/ml) in control group than in lactoferrin group at first, second and third month respectively 35.5% & 14.5% Vs 0% & 22.7%, 23.6% Vs 0%, 22.7% vs 0%.

Table 1: Comparison between the two studied groups regarding urine analysis at first month

Urine analysis at first month	Lactoferrin group		Control group		P value
	No	%	No	%	
> 100,000 CFU/mL, symptomatic	0	0.0	39	35.5	0.001*
> 100,000 CFU/mL, asymptomatic	25	22.7	16	14.5	
1000- < 100,000 CFU/mL, symptomatic	51	46.4	28	25.5	
1000- < 100,000 CFU/mL, asymptomatic	24	21.8	27	24.5	
No Growth (Normal)	10	9.1	0	0.0	

Table 2: Comparison between the two studied groups regarding urine analysis at second month

Urine analysis at second month	Lactoferrin group		Control group		P value
	No	%	No	%	
> 100,000 CFU/mL, symptomatic	0	0.0	0	0.0	0.001*
> 100,000 CFU/mL, asymptomatic	0	0.0	26	23.6	
1000- < 100,000 CFU/mL, symptomatic	35	31.8	24	21.8	
1000- < 100,000 CFU/mL, asymptomatic	37	33.6	27	24.5	
No Growth (Normal)	38	34.5	33	30.0	

Table 3: Comparison between the two studied groups regarding urine analysis at third month

Urine analysis at third month	Lactoferrin group		Control Group		P value
	No	%	No	%	
> 100,000 CFU/mL, symptomatic	0	0.0	0	0.0	0.001*
> 100,000 CFU/mL, asymptomatic	0	0.0	25	22.7	
1000- < 100,000 CFU/mL, symptomatic	0	0.0	30	27.3	
1000- < 100,000 CFU/mL, asymptomatic	66	60.0	30	27.3	
No Growth (Normal)	44	40.0	25	22.7	

Conclusion

- The current study findings have shown that lactoferrin taken orally in repeated courses significantly reduce recurrences of RUTI, as shown by much-improved clinical and microbiological cure rates as well as a favorable safety profile. After lactoferrin given orally, pregnant women with RUTI reported a significant decrease in their bacterial count.
- In conclusion, by noting that this is the first study conducted on pregnant women, our results prove that the prescription of lactoferrin as a line of prevention against RUTI in pregnant women would be beneficial.