

Upper Respiratory tract infection in breast feed baby versus formula feeding

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الخلاصة

تمت هذه الدراسة على 433 طفل في المركز الصحي التابع لجامعة العلوم والتكنولوجيا الأردنية للفترة من 1-30/11/2009 وكان 100 طفل منهم يعاني من التهابات الجهاز التنفسي العلوي. ومن خلال هذه الدراسة تم دراسة أنواع الرضاعة وتأثيرها على التهاب الجهاز التنفسي العلوي. حيث تبين أن الأطفال الذين يتم إرضاعهم رضاعة طبيعية في الـ 6 أشهر الأولى من حياته تكون الإصابات اقل بكثير مقارنة بالأطفال ذوي الرضاعة الاصطناعية. وجد هنالك علاقة قوية بين التهاب الجهاز التنفسي للرضاعة الطبيعية عكس الرضاعة الاصطناعية. من خلال هذه الدراسة تبين ان نظرية الرضاعة الطبيعية هي السائدة و الصحيحة للحماية من الالتهابات التنفسية ويحتاج في المستقبل دراسات كثيرة لمعرفة فوائد الرضاعة الطبيعية.

Abstract

Four hundred thirty three children has attending the health center of Jordan university of science and technology for a period between (Nov 1st –Nov30th) 2009.100 of them complaining of upper respiratory tract infection which included in this study .

We studied the effect of feeding types on the frequency of upper respiratory tract infection , the children who exclusively fed for the 1st 6 months of life had lower rate of upper respiratory tract infection compared to bottle feeding .

A strong association was found for protection against upper respiratory tract infection by breast feeding versus bottle feeding .The collection of data were prospective based on valid questionnaires and methodologies.

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Our finding supports the hypothesis that predominant breast feeding protecting against occurrence of upper respiratory tract infection , additional large controlled clinical trials are required to confirm these findings and to understand mechanism of breast milk protection .

Introduction

Breastfeeding is feeding an infant or young child with breast milk directly from human breasts and not from a baby bottle or other container. Babies have a sucking reflex that enables them to suck and swallow milk. Most mothers can nourish their infant (or infants in the case of twins and multiple births) by breastfeeding for the first six months or more, without the supplement of infant formula milk or solid food.

Human breast milk is the best source of nourishment for human infants,^[1] preventing disease, promoting health and reducing health care costs^[2] (though there are exceptions such as when the mother is taking some drugs or is infected with tuberculosis or HIV). Experts disagree about how long to breastfeed to gain the greatest benefit, and about the risks of using artificial formulas.^{[3][4][5]} In both developing and developed countries, artificial feeding is associated with more deaths from diarrhoea in infants.^[6]

The World Health Organization (WHO) recommends exclusive breastfeeding for the first six months of life and then breastfeeding up to two years or more. The American Academy of Pediatrics (AAP) recommends exclusive breastfeeding for the first six months of the infant's life and at least one year of breastfeeding in total. Exclusive breastfeeding for the first six months of life "provides continuing protection against diarrhea and respiratory tract infection" that is more common in babies fed formula.^[7] The WHO^[8] and AAP^[9] both stress the value of breastfeeding for mothers and children.

Benefits of breast feeding for the infant:

1. Superior nutrition
2. Fewer diarrheas
3. Greater immune health

4. Higher intelligence
5. Long term health effects
6. Fewer infections
7. Less atopy
8. Less necrotizing enterocolitis
9. Possible protection from sudden infant death syndrome

Benefits of breast feeding for mothers

1. Long-term health effects
2. Bonding
3. Hormone release
4. Weight loss
5. Natural postpartum infertility

Acute upper respiratory tract infections include rhinosinusitis (common cold), sinusitis, pharyngitis/tonsillitis, laryngitis and sometimes bronchitis. Symptoms of URTI's commonly include nasal congestion, cough, running nose, sore throat, fever, facial pressure and sneezing. Onset of the symptoms usually begins after 1-3 days after exposure to a microbial pathogen, most commonly a virus. The duration of the symptoms is typically 7 to 10 days but may persist longer.

Breastfeeding reduced the risk of acquiring urinary tract infections in infants up to seven months post-partum. The protection was strongest immediately after birth, and was ineffective past seven months^[10] Breastfeeding appears to reduce symptoms of upper respiratory tract infections in premature infants up to seven months after release from hospital.^[11] Increased duration of certain types of middle ear infections (otitis media with effusion, OME) in the first two years of life is associated with a shorter period of breastfeeding, in addition to feeding while lying down and maternal cigarette smoking.^[12] A reduced proportion and duration of any otitis media infection was associated with breastfeeding rather than formula feeding for the first twelve months of life.^[13]

The aims of the current pilot cross sectional study was:

To estimate the effect of type feeding among children under 2 year old attending the primary health care center in JUST, on the occurrence of upper respiratory tract infection.

Aim and objectives

The aim of this study is to test the impact of type of child feeding on frequency of upper respiratory tract infection in less than 2 years old children attending Jordan University of science and technology health centre.

Materials and methods

The sample of this cross sectional study were included all children aged 2 years and less complaining of symptoms of URTI (fever, runny nose, nasal obstruction, cough), and who attend Jordan University of science and technology health centre for the period of 1st -30th Nov. 2008.

Inclusion criteria:

Infants and children with URTI were included in this study if they met the following criteria:

1. Children aged 2 years and less.
2. Full-term.
3. No congenital anomalies.

Exclusion criteria:

Children with lower respiratory tract infection were excluded.

Parents of child questioned using well structured questionnaire

The using questionnaire involved data about general information (name, age, birth weight, family income and maternal education); and specific information (type of birth, symptoms of URTI, type of feeding).

Definition of variables**1. Acute respiratory tract infection:**

Defined as the presence of runny nose, or cough for at least two consecutive days plus one or more of the following signs (erythematous mucosa, hoarse-cry respiratory distress or fever), erythematous mucosa considered to be positive only when written in medical records.

2. Breast feeding:

Defined as fully breast feeding without receiving any other type of milk for all full term, healthy infants for the first 6 months of life

3. Mixed feeding

If the infant fed any combination of breast milk & formula were classified as mixed fed at four month of age

4. Bottle feeding:

The use of formula milk as substitute for breast milk for feeding infants.

Statistical analysis:

Statistical analysis was performed using chi-square test which was calculated manually.

Results

The number of under 2 years children attending health centre for the period 1.st Nov- 30.th Nov was 433 child, 100 of them child complained of upper respiratory tract infection were included in this study.

Maternal and children background data were included in table (1)

The number of children who had birth weight (2.5-3.5 kg) was (0.9), where as those with a birth weight less than (2.5kg) was (0.08), and those with birth weight more than (3.5 kg) was (0.02).

Effect of feeding types on the frequency of upper respiratory tract infection:

The total percentage of children who had more that 10 attacks of upper respiratory tract infection/year was (0.07) where as those with less than 5 attacks/year was (0.32), and those with 5-10 attacks/year was (0.61); regardless feeding types. Table (1)

Those children who were exclusively breast fed for the first 6 months of life had a lower rate of upper respiratory tract infection compared to bottle feeding and the difference was statistically significant (p-value <0.05). Table (2)

On the other hand while comparing the frequency of upper respiratory tract infection in breast feeding versus mixed feeding, a

lower rate was found in breast fed compared to mixed fed babes, and the difference was statistically significant (p-value <0.05).

Table (1) Frequency and Percentages of Birth Wt, URTI, Income and Mother Education according to the Type of baby Feeding

Variables	Breast Feeding Frequency (Percentage)	Bottle Feeding Frequency (Percentage)	Mixed Frequency (Percentage)
Birth Wt			
Low birth Wt (<2.5)	2 (0.0869)	5 (0.1351)	1(0.025)
Normal birth Wt (2.5-3.5)	20 (0.869)	31(0.8378)	39 (0.975)
Large birth Wt (>3.5)	1(0.043)	1(0.0270)	0
Frequency of URTI/Year			
<5 times/Year	22 (0.956)	5 (0.1351)	5(0.125)
5-10 times/Year	0	30 (0.8108)	31(0.775)
>10 times/Year	1(0.043)	2 (0.0540)	4(0.1)
Family income			
Low (<200)	0	0	0
Average (200-400)	3 (0.130)	2 (0.0540)	5 (0.125)
> 400	20 (0.869)	35 (0.9459)	35 (0.875)
Mother education			
Primary	0	0	0
Secondary	10 (0.434)	7 (0.1891)	3 (0.75)
Higher	13 (0.565)	30 (0.8108)	37 (0.925)
Total	23 (23%)	37 (37%)	40 (40%)

Table (2) The relation of the breast feeding versus bottle feeding and the occurrence of the URTI among children below 2 year

Variables	Breast Feeding	Bottle Feeding
<5 times/Year	22	5
>5 times/Year	1	32
Total	23	37

Table (3) The relation of the breast feeding versus mixed feeding and the occurrence of the URTI among children below 2 year

Variables	Breast Feeding	Mixed Feeding
<5 times/Year	22	5
>5 times/Year	1	35
Total	23	40

Dissection

There are numerous prospective studies reporting the relation between breast feeding & upper respiratory tract infection. It's reasonable to speculate that milk may confer several effects on the development of respiratory tract infection & illness.

A strong association was found for protection against upper respiratory tract infection by breast feeding versus bottle feeding, the collection of data were prospective were based on valid questionnaires & methodologies.

Collected data were emphasised on child age, birth weight, and average income of the family, mother's level of education & frequency of attack of the upper respiratory tract infection.

This current pilot cross sectional study results are consistent with that of other studies throughout the world; that claimed and proved the beneficial effects of the breast feeding against upper respiratory tract illness

All health organization and guidelines recommended exclusive breast feeding for 6 month, as this short period play a good role in the prevention of childhood upper respiratory tract infection and illness.

Conclusion and recommendations

Although, economic ,cultural, political pressures often confound decisions about infants feeding ,the American academy of pediatrics firmly adheres to position that breast feeding ensures the best possible health as well as the best development & psychosocial outcomes for the infant and provides continuing protection against various infections .

Pediatricians and other health care professionals should recommend human milk for all infants in whom breast feeding is not specifically not contra indicated & provide parents with complete, current information on the benefits and techniques of breast feeding to ensure that their feeding decision is a fully informed one.

Healthy infants should be placed and remain in direct skin to skin in contact with their mothers ,immediately after delivery until the first feeding is accomplished .

Supplements (water, glucose water, formula and other fluid should not be given to breast feeding new born infants).

Our finding support the hypothesis that predominant breast feeding protect against the occurrence of upper respiratory tract infection.

Additional large controlled clinical trials are required to confirm these finding and to understand the mechanism of breast milk protection.

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