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A Review of Cutaneous Manifestations in Newborn Infants

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ABSTRACT

Introduction: manifestations are very common in infants, and it can be a serious concern for parents, although most of them are benign and transient but some of them need further evaluation, accordingly knowledge about manifestations associated with infants can be an effective aid in the early diagnosis and treatment. The range of skin disorders is very wide. Timely examination of the skin in infants and control them is a good indicator to maintain the health of babies.

Material and method: The required information through searching key words like: cutaneous manifestations, rashes, cutaneous infections, neonatal acne, early diagnosis, by Google Scholar, PubMed, Scopus, Magiran, Sid and Irandoc [from 1990 to 2016] was done Which some relevant articles were found and examined. Among 82 articles only 19 papers were quite relevant to cutaneous rashes.

Findings: The first review of articles associated with this disease and infection and cutaneous rashes among infants and early diagnosis make a great help in timely treatment.

Conclusion: one of the common cutaneous diseases is rashes, which treatment of bacterial or viral rashes is depends on its cause. Since that time of the disease is limited, in many patients and people with mild symptoms, do not need treatment. If the disease is caused by bacteria or other infection, the doctor will prescribe antibiotics. Infants' diseases due to thin skin and body asthenia need control and early diagnosis and timely treatment.

Keywords: Cutaneous Manifestation, Rashes, Cutaneous Infection, Infant, Early Diagnosis.

INTRODUCTION

There are various cutaneous diseases in the world, some of them have short term treatment and others have long-term treatment, one of these common disease is rashes, rashes often occur due to bacterial or viral infection,

Reaction to the toxins produced by the body or skin damage caused by autoimmune diseases [1]. Drugs, particularly antibiotics, and nonsteroidal anti-inflammatory drugs are also causing skin rashes. Chickenpox, cold virus [rhinovirus], acne of childhood, Kawasaki disease, Typhoid fever,

Viral hepatitis and meningitis also cause rashes, which appear in the trunk, arms, and legs [2]. Rashes is very common in infants, which can cause the serious concern of parents. Although most rashes are transient and benign, but some of them need further evaluation. [2,3]. Neonatal toxic erythema, neonatal transient pustular melanosis and neonatal acne are transient Vesicular-pustular rashes which can be diagnosed based on identified appearance and clinically, Infants with unusual manifestation and sign of systemic disease must be evaluated in terms of Candida and bacterial and viral infections, Milia and Miliaria occur due to the immaturity of the skin structure [3]. Miliaria Rubra [also known as heat rash] usually improves after applying a cooling methods. Seborrheic dermatitis is extremely common [4], and should be differentiated from atopic dermatitis. Parental reassurance and observation is usually sufficient, the skin of newborns experience various changes. Most of these changes are benign and self-limiting, but it is possible that some of them require more control of the causes of infections or systemic disease. [5, 6]. Almost all of these skin changes are disturbing for parents and may result in visits to the physician or questions during routine examinations of infant. Thus, common skin lesions should have identified by doctors or health centers [7], and give training and counsel to parents. This article reviews the most common types of infant's skin diseases, ways of diagnosis and treatment.

Atopic eczema or atopic dermatitis

Many infants who are susceptible to allergy have no skin lesion till third month of life and at the same time, the dryness, redness, and desquamation on their cheeks start. Infant due to itchy lesions is often unrest.

And then gradually the lesions may become infected and secreted, Chin area are often affected but not involved around the mouth in most cases. With fours way down the forearm and shin infant also be involved and also when infants start it creeping the forearm and shin will be involved, and gradually the folds of neck, elbow and knee become red and inflamed. Atopic infants are allergic to many materials and must control their disease to find tranquility [8]. Woolen clothes for these infants causing itchy, some food and even cow's milk can exacerbate their problems.

Transient Vascular Phenomena

Newborn vascular physiology is responsible for two types of transient skin color changes: Cutis Marmorata and harlequin color change. These transient vascular phenomenon reflects normal physiology of baby rather than real skin rash but often it causes the parents' concerns.

Cutis Marmorata

Cutis Marmorata is a reticulated mottling of the skin that symmetrically involves the trunk and extremities. It is caused by a vascular response to cold and generally resolves when the skin is warmed. A tendency to cutis marmorata may persist for several weeks or months, or sometimes into early childhood. No treatment is indicated.

HARLEQUIN COLOR CHANGE

Harlequin color change occurs when the baby lies on his or her side, this measures include redness parts of the body that are affected by gravity under the weight and which causes the paleness of other side, in a way that suddenly changes colors and 3 seconds to 2 minutes remain and goes away by increased muscle activity and crying. This phenomenon can be seen in 10 percent of full-term infants. But often not get attention because the infant is bundled. It mostly occurs during the first days after birth and may last up to 3 weeks. It is thought that Harlequin color change occurs due to the immaturity of the hypothalamus center that controls the dilation of peripheral blood vessels.

Erythema Toxicum Neonatorum

Neonatal toxic erythema is the most common baby skin rash. It's estimated that it occurs about 4 to 7 percent of infants. It is most common in infants born at term Neonatal toxic erythema may be present at birth but often appears in the second or third day, typical lesions are including macules and papules which change into Pustules. Each pustule is surrounded by a blotchy area of erythema, leading to what is classically described as a "flea-bitten" appearance. The lesions usually create on the face, trunk and proximal extremities, palms and soles are not involved. Numerous infections including [herpes simplex virus, Candida, and staphylococci infections] may be present with vesicular-pustular rash in the neonatal period. Infants who appear sick or who have an atypical lesion should be evaluated in terms of these infections. In healthy infants, the diagnosis of erythema Toxicum neonatorum is made clinically and can be confirmed by cytologic examination of a pustular smear, which will show eosinophilia with Gram, Wright, or Giemsa staining. Peripheral eosinophilia may also be present. The etiology of neonatal toxic erythema is unknown, lesions generally disappear within 5 to 7 days but may recur within a few weeks. But no treatment is needed this condition is not associated with any systemic disorders.

Toxic Erythema

These lesions contain white- yellow spots with a red border with a diameter of 2-1 mm that is seen in 50% of infants at birth. They are benign and will be removed spontaneously. Lesions may be low and various and situated in one or several place.

Usually the palms and soles are not involved, the most frequent time to appear these lesion is the second day of life. But new lesions during the first days of life may be created with aggravating and mitigating rash. Lesions may occur in premature infants later. There are no germs inside erythema, purulent flakes. The cause remains uncertain and

duration of illness is short and no treatment is necessary. So, unlike the scary name lesions, no specific peril threatens infants.

Transient Neonatal Pustular Melanosis

Transient Neonatal Pustular Melanosis is a Vesicular-pustular rash which seen in about 5 percent of black infants and in less than 1 percent of the white infants. Unlike the neonatal toxic erythema, Transient Neonatal Pustular Melanosis lesions have no erythema around the lesion. In addition, these lesions rupture easily, leaving a collarette of scale and a pigmented macule that fades over three to four weeks. All areas of the body may be affected, including palms and soles. The clinical diagnosis of transient neonatal Pustular Melanosis helps physician to avoid unnecessary diagnosis test and treatment of infectious etiologies. Among the pigmented macules, vesicular- pustules lesions are the unique features of this disease; these macules are not occurred in any infectious rash. Gram, Wright, or Giemsa staining of the pustular contents will show polymorphic neutrophils and, occasionally, eosinophils.

Acne Neonatorum

Acne Neonatorum affects about 2 percent of infants. It typically consists of closed come downs on the forehead, nose and cheeks are, however, other areas may be affected. Open come downs, inflammatory papules and pustules may also be occurred. It is thought that Acne Neonatorum sources from stimulating the sebaceous glands of maternal or neonatal androgen. Parents should ensure that these lesions usually recover during 4 months spontaneously and without any problem. But if the lesions are extensive and remain for several months can treat infants with 2.5% benzoyl peroxide lotion. In resistant and severe acne, the early diagnosis and treatment is required by the parent.

Milia

Milia are 1- to 2-mm pearly white or yellow papules caused by retention of keratin within the dermis. These lesions may occur up 5 percent of infants. Milia is often created on the forehead, cheeks, nose, or chin, but may be occur on the upper trunk, limbs, penis, or mucous membranes. Milia usually disappear spontaneously within the first month, although it may persist until the second or third month. Milia is a common cause of parental concern and need to be reassured about the benign and self-limiting nature of these lesions.

Miliaria

Miliaria results from sweat retention caused by partial closure of eccrine structures. Both Milia and Miliaria resulted from of immaturity of skin structure but clinically considered as distinct categories. Miliaria affects up to 4% of the infants, and usually occurs during the first month. There are several types of it which clinically are indistinguishable Milaria; Miliaria Crystallina and Milaria Arbur are the most common case; Miliaria Crystallina is caused by superficial eccrine duct closure and it's consist of 1 to 2 mm vesicles without surrounding erythema which appear on

the head, neck, and torso more. Miliaria Rubra which is also called heat rash, caused due to sweat glands obstruction at a deeper level. Small red papules and vesicles that form lesions usually occur on the part-covered body. Miliaria Rubra is also called "heat rash" occur due to obstruction of sweat glands at the deeper level. Its lesions are small erythematous papules and vesicles, usually occurring on covered portions of the skin. Miliaria crystallina and miliaria rubra are benign. Avoidance of overheating, removal of excess clothing, cooling baths, and air conditioning are recommended for management and prevention of these disorders.

Seborrheic dermatitis

Seborrheic dermatitis is an extremely common skin disease characterized by erythema and greasy scales. Most of the parents know this rash as "cradle cap" because often appears on the scalp. Other affected areas include: the face, ears, and neck. Erythema tends to predominate in the flexural folds and intertriginous areas, whereas scaling predominates on the scalp. Since Seborrheic Dermatitis expands in diaper area, this area should have considered during the assessment of dermatitis. The clinical differentiate of atopic dermatitis from seborrheic dermatitis is difficult, the age of onset and presence or absence of itching is helpful. Psoriasis has a similar clinical features as seborrheic dermatitis, but its prevalence is lower. The precise etiology of seborrheic dermatitis is unknown. Some studies have implicated the yeast *Malassezia furfur* [previously known as *Pityrosporum ovale*]. Hormonal fluctuations may also be involved [9], which would explain why seborrheic dermatitis occurs most often in areas with a high density of sebaceous glands. Generalized seborrheic dermatitis accompanied by failure to thrive and diarrhea should prompt an evaluation for immunodeficiency. Seborrheic dermatitis in infants often is self-limiting and resolves within a few weeks to several months, But the relationship between infancy and adulthood seborrheic dermatitis remains unclear [9,10]. Moreover, the nature of seborrheic dermatitis in infants is benign. But reliable information is available about its safety in infants.

Sebaceous hyperplasia

This tiny white yellow lesions appear in forehead, nose, upper lip, and cheek. These lesions gradually and spontaneously disappear during the first few weeks of life.

Salmon patches

Sometimes in the area between the eyebrows, eyelids, upper lip and on the back of the neck a pink patch appear which is cleaner when infant crying. These lesions indicate the localized coronary dilatation which usually remain a few months And may be more visible at crying times or ambient temperature changes. Most of the lesions gradually faded and disappeared, but in the back of the neck and behind areas often remain.

Seborrhea dermatitis [skin head babies]

One of the problems mothers face in their children's infancy is flaking baby's head. This flakes are skin-colored and then become a little red and inflamed. In general, there are two main reasons for baby's head flaking, which the most

common cause is seborrhea dermatitis. Seborrhea dermatitis is a disease that occurs more common in children than in adults. The cause of this disease in adults is a fungus that can cause dandruff with inflammation, redness and itching [9], and involves the hairy areas like the scalp in women and like the beard, mustache, and eyebrows in men. This involvement in many cases will be accompanied by flaking and inflammation. Seborrhea dermatitis may occur about 1-2 months of age in infants with symptoms such as scaling scalp [with or without inflammation]. In most cases, this problem cannot accompany a certain skin inflammation.

This can occur in the neck or body folds of infants with redness or inflammation which usually itching does not appear. In general, children with dermatitis seborrhea are not restive. Compared with children who their flaking is due to developing Atopic eczema these children because of itching at the site of their lesions, are not quiet. And Unlike adults who their seborrhea dermatitis is caused by the fungus [10,11] usually interfere no infectious agent associated with this type of fatty eczema or seborrhea dermatitis in infants. And attribute this problem to the deficiency of some materials such as amino acids in their bodies.

Usually no specific treatment except frequent greasy scalp of infants, is not recommended. Sometimes is suggested parents to lubricate the scalp of the baby by vegetable oils such as olive oil. Use baby shampoo is appropriate for such infants. But in cases which scaling is excessive and is out of control [11], can use dandruff shampoo to wash their head by a dermatologist recommendation for a short time. If the shells scalp occur with inflammation in addition to lubrication should use the nonsteroidal anti-inflammatory drugs to treat kids for a short time. The use of this topical medications should be prescribed by dermatologist or pediatrician with adequate experience in this field. Long-term use of such drugs to children or arbitrary executions is very harmful and dangerous [12]; because its compounds are able to absorb into their body by thin skin of infants and cause lots of problems for them.

Atopic eczema is the other reason for the baby's flaking which occur due to the excessive dryness of the skin [13]. Children with this condition are often unrest and are not sleeping well. In addition, if you are old enough to be able to use their hands, incessantly scratching various parts of their bodies. In many cases, these baby's cheek involved in eczema, and because they are not able to scratch the area [13], they rub their cheeks on the pillow or pad and exacerbate their eczematous lesions due to contact the skin with a pillow or pad. In children or adults using anti-inflammatory drugs [NSAIDs] to treat the Atopic eczema, especially if the scalp is also associated with acids is necessary [14]. These drugs can help to relieve skin inflammation. In addition, lubricating the dry skin of children who suffer from Atopic eczema persistently is very important to reduce the inflammation and itching. Shaving the hair of children for the treatment of seborrhea dermatitis or Atopic eczema having no impact to quick recovery of the problem, but incidentally, it is possible that shaving head and skin irritation, aggravate the symptoms and sever the disease and make them more upset and hurt babies. That's good to know that hair is not an agent for these two types of skin problem so that we want to remove this factor take a step to improve this disease faster.

Histiocytosis

Histiocytosis is one of the diseases with signs and symptoms on scalp and face and it is possible to have similar symptom as seborrhea dermatitis. Sometimes such Nutritional deficiency as deficiency of zinc may causes some problems in the area on the scalp or face that require further attention by dermatologists [15,16].

Mongolian spots

In 50 percent of newborns, dark spots appear on the back of the pelvic area, which is known as Mongolian spots. These spots remain from 6 to 11 months of age and disappears over time. Involvement of Hands and feet should put the doctors to think of Scabies and acropustulosis of infancy. Eczematous lesions around the eyes, around the mouth and in the genital area can also be a sign of zinc deficiency [17].

Many skin diseases in infancy and childhood recover spontaneously and do not have much importance, but some of them are particularly important and may even be a sign of major and Systematic diseases [18,19]. So, the evaluation of neonates and infants with skin specialists besides pediatrician is important.

CONCLUSION

Some skin problems of infants need special treatment, and some gradually resolve without treatment, although infant's skin is extremely sensitive but their skin in the face of many special physical conditions does face a more vulnerable than adults, It can be said that skin diseases in babies is more prevalent because of the weakness and the little physical strength [19], According to the results of review articles, the rashes are very common in babies, but in some cases cause parent's serious concerns. Most rashes are transient and benign, but some of them need further evaluation and management, accordingly knowledge about skin manifestation related to Baby is an effective aid in the early diagnosis and treatment.

The range of Skin disorders is very wide. Skin Examination in infants and timely control are good indicators for the health of infants, according to the review was conducted on 19 technical papers in the field, can be said that most of the studies suggest that the prevalence of the disease in newborns need to pay a special attention and more control [15,16], The treatment of bacterial or viral skin rash depends its cause. Since the period of the disease is limited, in many cases the symptoms are mild and do not need treatment. If the disease is caused by bacteria or other infectious agents, doctors prescribe antibiotics [17], and, if necessary, doctor may prescribe medication to reduce fever and pain and to relief the itch. To reduce the surface itching, moisturizing creams are used for babies and in severe cases need to be monitored by a specialist and timely treatment and Giving advice and training to parents to pay more attention to babies in the care and skin disorders by the doctor or health care centers is necessary.

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