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## Dr. Shaista Bano

Assistant Professor, Dept. of Monafeul Aaza (Physiology), Salfia Unani Medical College and Hospital, Darbnanga, Bihar, India

## Dr. Md. Kausar Ali

Medical Officer, Samay hospital, Patna, Bihar, India

## Dr. Sazid Alam

Assistant Professor, Dept. of Moalejat, Sufiya Unani Medical College Hospital and Research Centre, Bara Chakia East Champaran Bihar, India

## Birth to infant care described by Ibn-e-Sina in canon of medicine

**Dr. Shaista Bano, Dr. Md. Kausar Ali and Dr. Sazid Alam**

### Abstract

Unani System of Medicine is based on the specific ideology put forward by Hippocrates. The most important principle of Unani Medicine is temperament (Mizaj) which classifies human beings, diet, drugs, etc. into four qualitative types: Hot & Dry, Hot & Wet, Cold & Wet and Cold & Dry. However, the rational, sophisticated synthesis and integration of basic science and organismal biology show Unani medicine, as described by Avicenna, as a true systems biology paradigm that also serves as a model for the practice of truly individualized medicine which is described in "The Canon of Medicine". The conceptual framework of Unani medicine encompasses universal principles. Avicenna frequently asserts and highlights in his "Canon" that these principles are borrowed from the relatively sophisticated physical sciences of his own era. The Canon of Medicine is a comprehensive and yet concise account of medicine of his time. In the Canon of Medicine, a chapter is passionate to the infant care which dealing with treatment of the cord, treatment of the skin, binding the infant, sleeping-quarters, bathing the infant, the way to hold the infant while washing it, the regimen during lactation and weaning, inability to nurse the child, the characters of a good wet-nurse, list of galactogogues, anti-galactogogues, regimen of wet-nurse, duration of lactation, regimen up to dentition, hygiene of dentition.

**Keywords:** Infant care, canon of medicine, Ibn-e-Sina, Al-Qanoon, Unani medicine

### Introduction

#### Method of Cord Care

When the baby of equitable temperament (*Moatadil Mizaj*) is born, it has been said by a group of respectable physicians (*Jamat-e-Fazil-e-Attiba*) that the first thing to do is to cut the umbilical cord at a measure of four fingers above, tied with a wool thread that has been gently woven so that it will not cause pain and covered with an olive oil-soaked cloth. It is also strongly encouraged to dust the naval with a mixture containing equal parts of greater celandine (*Chelidonium majus* (Haldi), *Dracaena cinnabari* (Dammul Akhwain), *Astragalus sarcocolla* (Anzaroot), *Cuminum cyminum* (Zeerah), *Muscus arboreus* (Ushna) and *Commiphora myrrha* (myrrh)<sup>[1, 2]</sup>.

#### Method of the skin care

Very early after birth, the skin of the baby should be washed with lightly salted water (*Tamleeh*) to firm up the skin and strengthen it and until the cord has desiccated. The best agents to employ for this purpose are shadanaj (a stone, shaped like a lentil or bloodstone), bitter costus (Qust), sumach (Sumaq), fenugreek (Tukhm Hulba), and origanum (Saatar). But the nose and mouth must not be exposed to such agents. The reason for hardening the body in this way is that everything hot, cold, or rough is injurious to the sensitive infant's skin, and so it needs to be hardened against all things of that kind which will come contact with it. Hence, if the process of salting has to be repeated, so do. Such treatment is the more indicated if there are dirty or there is much humidity. After this, the body should be laved in tepid water, the nostrils thoroughly cleansed with the fingers, whose nails are cut short, and a little oil should be instilled into the eyes. The anal orifice should be caused to move by manipulation of its vicinity by means of the little finger, so that it may open. Care should be taken that nothing cold coney in contact with it. After the cord has separated-which should be in three or four days-the stump should be treated with a measure of bone ash, Khakaster Sadaf, or powdered lead oxide in wine<sup>[12, 3]</sup>.

#### Binding the Infant

In doing this the limbs must be handled very gently. Every part should be molded (*Taqmeet*) according to its appropriate form-making wide that which should be wide, slender that which

### Correspondence

#### Dr. Shaista Bano

Assistant Professor, Dept. of Monafeul Aaza (Physiology), Salfia Unani Medical College and Hospital, Darbnanga, Bihar, India

should be slender, doing all as gently as possible between the tips of the fingers. This should be done many times. The eyes must be carefully wiped with a silken band. The bladder-region should be pressed to help the exit of the urine. After this, stretch out the hands towards the knees. Such type of practice is not done in India. Bind the head, fitting as it were a cap to the head<sup>[2, 3]</sup>.

### **Sleeping-Quarters (rooms)**

The infant must be placed in an airy room, with not too cool air. The room should also be shady or even slightly gloomy so that the eyes are not likely to receive direct light. While sleeping the head should be at a higher level than the rest of the body, and someone should watch lest any part of the body (neck, limbs, back) should get into a twisted position<sup>[1, 2, 3]</sup>.

### **Bathing the Infant**

In summer time (*Mausam-e-Garma*) it should be bathed with suave tepid water (moderate warm water). In winter the water should be on the warm side. The best time to wash the infant is after a long sleep, but it may be desirable to wash it twice or three times in the day. In winter, the infant should not be washed unless its body becomes ruddy and warm thereby. After taking it from the bath, take care none of the water gets into its ears<sup>[1, 2, 3]</sup>.

### **The way to hold the infant while washing it**

Take it by the right hand, and hold it so that the left arm is over its chest and not over its belly. After the laving, the palms and soles should be gently raised (up and down). It should be gently wiped dry with soft cloths. Then turn it down on to its belly, then back on its back, rubbing gently all the while, pressing and molding, then back on its belly to apply the binder. Afterwards infuse sweet oil into its nostrils, and bathe the eyes and lids<sup>[1, 2, 3]</sup>.

### **The Regimen during Lactation and Weaning**

The following is the mode in which the feeding of the infant is to be arranged. Whenever possible, the mother's milk should be given and by suckling. For that is the aliment of all others most like in substance to the nutrient material which the infant received while in the womb-the menstrual nutrients of the mother. It is these which are changed into milk after parturition, and such milk is better adapted for the infant. Experience shows that merely to place the mother's nipple into the infant's mouth is a great help towards removing whatever is hurtful to the infant<sup>[1, 4, 5, 6]</sup>.

It should suffice for the infant to suck the breast twice or thrice in the day at first, and it should not be allowed to take too much. It is best to wait till the disturbance in the temperament of the mother has subsided somewhat before the infant is given the breast. It may be give a little honey first, and the breast later<sup>[1, 2, 6]</sup>.

The milk which the boy sucks should be drained away two or three times in the morning, before presenting the nipple, especially if there be any spots in the milk. Sourish or otherwise defective milk should not be given while the nurse is fasting. Besides this there are also two other things to be done to help to strengthen the constitution: gentle (rocking) movements; humming music or some old song, or prattling to the infant, as is customary while placing the babe into its cradle. How much these two practices are to be employed may be judged [individually]; the movement is for the benefit of the body, and the music is for the benefit of the mind<sup>[1-5, 7]</sup>.

### **Inability to nurse the Child.**

If there be anything to prevent the mother from giving milk to the babe-for instance, owing to her weakness or to the defective quality of her milk, or because it runs too quickly, a wet-nurse should be selected according to the following rules: (1) age; (2) form or physique; (3) personal character or habits; (4) the shape of the nipples; (5) the quality of the milk; (6) the interval of time which has elapsed since her parturition; (7) characters of her own child. Having found a wet-nurse in whom the requisite conditions are fulfilled, she must be provided with nourishing foods such as are given below:-

### **The characters of a good wet-nurse**

(1) The age should be between 25 and 35, because during this period there is youth and health and perfection. (2) Form and physique. The colour should be good, the neck strong, the chest strong and broad, the flesh muscular and firm,-neither very fat nor very spare, the proportion of the fat in the flesh being moderate. (3) Personal character and habits. These should be good and praiseworthy. She should be only slowly aroused by the bad passions of the mind, such as anger, gloom, fear, etc. For all these injure the constitution and may change the milk or pass into it, or even prevent -its secretion. It is for this reason that some people reject a nurse who is stupid. Besides this, if the character be not good, she will riot trouble herself over the infant or caress it enough. (4) Shape of nipples. They must be firm in consistence and large, but not too large. On the one hand large nipples hurt the infant's gums and impede deglutition, and on the other they will hold more milk than the infant can take, and some is then left behind to undergo decomposition, therefore being injurious at the next feed. If the nipples are too small, the infant cannot take hold of them, and there will not be sufficient milk. Therefore the consistence should be between hardness and softness. (5) Quality of milk. The consistence must be between coarse and fine; the colour white (not dusky, greenish, yellowish or ruddy); the odour good, without acidity or pungency -; the taste sweetish (without any bitterness, saltiness, or acidity). The quantity should be of a certain amount. It must be homogeneous. It must not be thin, watery, nor very thick or cheesy; nor there any discrete particles in it. There should not be much foam<sup>[1, 2, 7]</sup>.

### **Tests**

The consistence may be tested by allowing the milk to run over the finger-nail. If it flows easily, it is thin; if it does not flow over the inclined nail, it is thick. Again' peck some in a glass vessel, and drop a little myrrh into it, and stir the two together. The aquosity and the degree of caseity are then evident. The milk is laudable and at tempered if the watery part and cheesy part are equal. Should there be some special need to prepare such a milk, we should prepare it partly from the mother, and partly from the wet-nurse. From the mother because it is better not to give thick milk of unhealthy odour until it has been allowed to stand exposed to the air for a while ; and because it is best not to give very warm milk to the fasting infant<sup>[12, 3]</sup>.

### **Diet**

If her milk is thick, the wet-nurse should take oxymel; and a decoction of attenuants such as hyssop, thyme, savory, origanum montanum, and the like should also be included in the menu. A little radish may be added old pickle in vinegar and honey. Vomiting should be induced with hot oxymel to

get rid of the phlegm, (Suitable) work before meals will help to thin the milk. If the wet-nurse be of hot intemperament she should take acetous syrup, and a light wine should be taken either at the same time or separately<sup>[1, 2, 3]</sup>.

If her milk is thin, one should instruct the nurse to rest, and avoid exercise or work, and she should be given foods which thicken the blood. If there is no contra-indication, one might allow her sweet wine. Allow plenty of sleep. If the milk is scanty, one should ascertain the cause: e.g. is it "an abnormal temperament affecting the whole body, or" the breast itself? To determine which it is one employs the indications given in preceding chapters. If palpation of the breasts shows them to be unduly hot, the diet should consist of such things as barley water, spinach, and the like. If there are signs of coldness of temperament in the breasts, and of obstructions, or inadequate attractive power, the diet should include attenuated aliments tending to a warm nature; and cupping instruments should be applied beneath the breasts, taking care not to press much on the breast. Carrot seed is also beneficial, and the carrot itself is also very good for such a condition<sup>[1, 2]</sup>.

Should the cause be that the nurse has been previously insufficiently fed, she should be given a broth made with barley, bran and legumes, and such as the following should be introduced: fennel roots, and seeds, and dill, and nigella. Others say that the udders of sheep and goats should be eaten with the milk therein contained, as being helpful in virtue of that which is of like nature or property in such foods. Others have recommended the administration of an "ounce" of tree-worms or dried earth-worms in barley water for several days, saying they have found it excellent for the purpose. So also the expressed juice of the heads of salted fish, taken in dill water<sup>[1-6]</sup>.

### List of Galactogogues

One ounce of butter from cow's milk placed into a vessel of good wine; taken as a drink. (2) Sesame ground up in a fine mill and mixed with wine; taken as a drink. (3) An emplastrum or liniment applied to the breasts, prepared with balsam of nard and asses' milk and oil. (4) Take one ounce of the interior parts egg-plant; this being dissolved in wine, by stirring; it is taken as a drink, (c) The following is a powerful medicament: dill seed, three ounces; seed of blue melilot (or, lot tree), of leek, one ounce of each; clover seed and fennel seed, two ounces of each; mix the whole into a drink with fennel juice, honey and butter. (6): broom leaves taken in dark-coloured wine or in a ptisan; sweet gith (melanthium), and the root and seed of carrots soaked in warm water. Aegineta warns that such remedies are weakening to the body). (7) Massaging the breasts frequently with bland hands renders the secretion of milk plentiful<sup>[1, 2-3, 7, 9, 14]</sup>.

### Anti-galactogogues

If the milk is injuriously abundant, or has accumulated because it is unable to escape owing to the presence of some form of obstruction, or because the milk is too thick, one may reduce the quantity secreted (1) by reducing the amount of food; (2) by employing those articles of diet which contain but little nourishment; (3) by applying a (discutient) plaster over the chest and breasts, composed of caraway in vinegar or white clay in vinegar, or of lentils boiled in vinegar; this is followed up by a draught of salted water; (4) by eating mint. If the milk has an unpleasant odour, the remedy is to give as a drink a fragrant wine; and as food, foods of pleasant odour.

(6) Rules regarding the period of time which has elapsed since the wet-nurse was herself confined. The birth should have been recent, namely months at least (two months, if the child was a male); the birth should have occurred at the proper date and not premature; nor should there be a history of habitual premature births<sup>[1, 2, 3]</sup>.

### Regimen of wet-nurse

**Diet:** The aliments should consist of food giving good chyme. For example, foods such as wheat, frumenty, lamb, kid of goats, which are not putrescent or have hard flesh. Lettuce, almonds, filbert-nuts. Mint. Potherbs which are deleterious: herb-rocket, mustard, mountain balm-for they cause the blood to undergo decomposition<sup>[1, 7]</sup>.

**Exercise:** This should be moderate. Moulding with the hands and shoulders, milling, weaving, and carrying the child about in the arms<sup>[1, 2]</sup>.

**Personal:** The wet-nurse should not allow coition, for this disturbs the menstrual blood and diminishes the quantity of milk and alters its composition, as shown by change of odour. Moreover she might become pregnant, in which case there would be a dual unpropitious influence-to the wet-nurse herself in that whatever is attenuated in the blood enters into the nutriment of the embryo, and to the embryo in that it loses as much from the mother's aliment as passes on to form milk<sup>[1, 2]</sup>.

During the whole period of lactation, especially the first lactation, it is advisable to have some of the milk drawn off to encourage and facilitate its flow; this is also aided by massage, otherwise the delicate organs of suction will be injured and weakened. It is a help to anoint with a little honey each time before the infant is nursed; and a little wine may also be added. It should not be allowed to take much milk at one time<sup>[1, 2, 3]</sup>.

It is better to feed little and often, at small intervals. For it may happen that after becoming satiated with the whole of the contents of the breast the infant suffers from distension, and very much flatulence, and the urine becomes white. In such a case, the best thing is to stop the nursing, allowing the infant to go hungry for some time, and it should be meanwhile put to sleep till digestion has had time to be completed. At first, the infant is allowed the breast three times only in the day. Should it be necessary to feed it on the first day, it would be better for someone else than the infant's mother to do so, as we have explained. Should the wet-nurse develop an intemperament or a painful malady, or have diarrhoea, or be constipated, someone else should give milk until she is better. The same applies if it be necessary to administer to her some medicine which has a decided potency or quality. The infant is laid to sleep after feeding, but its cradle must not be rocked vigorously as otherwise one would churn the milk in its stomach. The rocking must be quite gentle. It is good for the infant to cry a little before the feed<sup>[1, 2, 3, 5, 10]</sup>.

### Duration of lactation

Normally this is two years. When something additional to milk is required, such addition should be made step by step. Weaning must not be abrupt. Gruner stated that committed the child to the nurse, and he drank milk two years, after which they weaned him, and he grew up, and thrive, and walked upon the floor. After the first two teeth have appeared, a progressively stronger aliment is to be considered. Hard

things, however, must not be allowed. At first, bread is given which the nurse has masticated. Afterwards, bread softened with honey water, or dilute wine or with milk. This is followed by a little water, or even a little wine in the water. It must not be allowed to take food to repletion. Should indigestion or flatulence occur, and should the urine become white, all food is stopped for a while, at least until it has been anointed in the bath<sup>[1, 2, 3]</sup>.

### Weaning

In weaning the infant from milk, the aliment must consist of articles which can be sucked up; and the replacement of milk by “acorns” of bread and sugar should be gradual. Soft meats may be given. If the infant persistently seek for the breast, crying for it, the best thing is to prepare a paste to apply to the breast, made of four ounces of myrrh and smoothly ground pennyroyal<sup>[1, 2, 3]</sup>.

### Regimen up to Dentition

To sum up, we may say that the regimen of the infant is to be humectants, corresponding to its temperament at this period, for this is necessary both for nutrition and growth. The infant is also to be exercised gently correspondingly to the needs of nature, and especially during the later period of infancy<sup>[1, 2, 3, 4, 9, 10]</sup>.

When the child begins to creep about, it must not be allowed to make strenuous efforts, or be encouraged to walk or sit erect before the natural desire to do so appears; otherwise there may be injury done to its legs and back. When it first sits up or creeps over the ground, it is best to place it upon a smooth skin, to prevent injury by roughness in the floor. Bits of stick or any objects able to pierce or cut the skin must be kept out of its way. Care must be taken that it does not fall off some elevated place<sup>[1, 2, 3, 11]</sup>.

### Hygiene of Dentition

When the canine teeth are about to appear, the infant must not be allowed to chew at anything hard lest the material from which these teeth need to be made should become dissolved by the processes of mastication. The gums should be rubbed with hare's brain and cock's fat, as this will help their eruption. After the appearance of the teeth, the infant's head and neck should be rubbed with oil which has been shaken up with hot water [to cleanse it], and a little of the same oil may be instilled into the ears. As soon as the infant is able to bite with its teeth, it will show this\_ by trying to bite its own finger. It should then be given a stick of not too dry liquorice root or inspissated Spanish juice to chew at, for this will be beneficial at this period and will prevent ulcers from forming in the gums and dull the pam and irritation of teething. The gums may also be rubbed with salt and honey to relieve the pain, when the teeth are fully out, the infant may be given a stick of liquorice or root of liquorice (not too dry) to bite at. When the canines are fully out it is good also to rub the neck with some form of sweet oil. Later still, when the infant begins to talk, its teeth should be rubbed, especially at their bases<sup>[1-5, 7-15]</sup>.

### Conclusion

Existing Unani literature is compiled with the help of Canon of Medicine which was translated by Gruner Cameron (English version) and Urdu version as Kulliyat-e-Qanoon translated by Allama Hakeem Kabiruddin. This review article provide the concept of infant care which described by Ibn-e-

Sina (980 AD-1037AD) is similar to present knowledge. It is concluded that the conceptual framework of Unani medicine encompasses universal principles. Avicenna frequently asserts and highlights in his “Canon” that these principles are borrowed from the relatively sophisticated physical sciences of his own era.

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