

Research paper on rachitism: understanding rickets today

[Family](#), [Children](#)



INTRODUCTION

Modern society is surrounded on a daily basis by toxins and pathogens, along with the potential development of any number of diseases and disorders, all of which can be harmful to people and, in some cases, lead to their inevitable death. However, nothing is more difficult and disturbing than when the individuals afflicted are children. Diseases that specifically affect children have garnered as great deal of dedicated research and study. One of the most harmful of childhood ailments that can have permanent and long lasting effects is Rachitism, or as it is commonly known today, Rickets. This childhood condition is characterized by poor bone calcification, the softening and distortion in bone growth; it most often results in bone malformations, like bowed legs. What makes rickets all the more tragic of childhood afflictions is that it is, for the most part, treatable and, more importantly, preventable (Brunner, 2014). There are numerous articles on the subject; the most popular area of discussion is in the realm of prevention. In an article for Pediatrics, by C. L. Wagner and F. R. Greer, offers a well-rounded summary of the condition, but is very much focused on prevention, with a specificity of treating and preventing the condition in children as young as newborns. Another article, for the Journal of Health, Population and Nutrition, T. Craviari and other authors, discuss not only the present, but the future directions being considered in the treatment and prevention of rickets and limit its prevalence here in the United States and all over the world. That said, given the research and the serious consequences of this disease on the development and growth of children, the greatest focus should be on

prevention and therefore elimination of the condition as a threat to juveniles everywhere.

HISTORY

In the most simplest of explanation rickets is bone deforming and malforming of the bones due to a deficiency of calcium, phosphate and vitamin D. There are three most common types of rickets; hypophosphatemic rickets, which are vitamin D resistant rickets, renal or kidney rickets, and the most commonly diagnosed, nutritional rickets. All of these seem to be most prevalent in infants between 6 and 24 months. Cases of rickets can be traced back to the 17th century, when the condition became all too common among Britain and other parts of Western Europe. However, when it was discovered the connection between rickets and Vitamin D, the United States began a trend of adding Vitamin D to pasteurized milk products. After this the diagnosing of the condition dropped nearly to none (Perlstein, 2014). However, it has remained prevalent in developing and under-developed countries, like India, however in the last few decades the prevalence in the United States has returned. That said greater research and understanding is needed in order to lessen that new prevalence and change the statistics for children all over the world.

DISCUSSION

According to Craviari and the other authors, there are potentially 5, 000, 000 children throughout Bangladesh that are currently suffering from the effects of rickets, specifically, nutritional rickets (2008). The number in the United States is far more modest, but many children are still suffering from the

condition and the numbers are growing. In order for researchers and experts to truly get a grasp on the condition known as rickets it is necessary to review its potential causes, its signs and symptoms, its treatments and the prevention approaches that can be considered in the future, individually.

Causes

Professionals explain that hypophosphatemic rickets can attributed to a genetic defect that disallows the child's body to process phosphorus. This phosphorus deficiency in the blood can lead directly to weakening or softening bones. In the case of renal and kidney rickets, the issue usually stems from another conditions or disease that is affecting the way the organs metabolize needed nutrients and vitamins. However, at the core of the issues is malnourishment (Brunner, 2014). Malnutrition, especially, when it begins in infancy can have incredibly detrimental effects on the child and will, likely, continue to do so. That said there are three reasons that a child can be diagnosed as malnourished. Firstly, they do not have enough food to eat in general, they may not be starving but they are not getting the rights foods to maintain good health, and, finally, the children are unable themselves to properly use the foods that they do eat, whether it is good for them or not. This is the unfortunate reality for many children all over the world. Vitamin D deficiency is the most significant of rickets causes (Perlstein, 2014). We need vitamin D in order for calcium to be absorbed into the kidneys. The most common location to gain vitamin D is the sun or through alternative sources like milk products that have been infused with vitamin D. without it their bodies will not make proper use of calcium; with

calcium deficiency it will begin to take its toll the bones and teeth (Brunner, 2014).

Signs & Symptoms

In infants many have identified one of the earliest symptoms seen in little babies is something termed, “ floppy baby,” which is limpness in the baby and a lack of bone strength. Some of the earliest symptoms seen are likely the pain and discomfort associated with the weakening of bones and the softening making them easier to break, soft skull, height and growth may be stunted, deformities of stabilizing bones like the pelvis and spine and uncontrolled spasming throughout the body. In toddlers a bowing of the legs and in older children the “ knobbing” of the knees is often noted. In order to determine a diagnosis of rickets a number of test are conducted, including blood tests, x-rays and bone biopsy if needed. There are of course other conditions that can cause some of the symptoms, but once the lacking of Vitamin D is clearly determined then the diagnosis of rickets is a given (Brunner, 2014). Now most modern scholar including, Wagner and Greer, offer that it is indeed vitamin D deficiency is the root cause of rickets, but they offer that the disease has a greater contributor, poverty. Poverty is what prevents people all over the world and here in the United States from be able to afford the best foods on a regular basis. That said the greatest cause is poverty; eliminate that and the issues of rickets would lessen, likely, all on their own.

Treatment

When rickets goes untreated rickets can lead to some very severe health problems and permanent damage and disability. The child's bones will grow softer and softer, which is both painful and can lead to a bowing and breaking of bones. The low blood calcium they are experiencing can lead to cramping, breathing problems, and, of course, the aforementioned seizures. In some cases the weakness of rickets leads to lethargy and damage to the heart that, however, rare, can lead to death (Perlstein, 2014). It is not entirely dissimilar to the sufferers of eating disorders, whose hearts often give out. The number one most important measure that physicians will take when treating someone with these issue, is changing the diets of such children and supplementing whatever nutrients they are in need of, which, of course, again, is most commonly Vitamin D and calcium, they are also dosed yearly with a Vitamin D booster and are encouraged to expose themselves to sunlight, or a source of ultraviolet B light, and add more Vitamin D enriched foods, like milk, fish oil, mushrooms and cheese to their diet. In the case where the rickets is exacerbated by an existing diseases or condition, as in kidney or renal rickets, then the measures to treat that illness would be complimentary with the supplemental vitamins and changes in diet. In the cases of genetically developed rickets patients are given the same dietary suggestions, but they will also be given phosphorous supplements and vitamin D hormonal treatments (Brunner, 2014).

Prognosis

When recognized and diagnosed early the prognosis for children with rickets is incredibly good, with the proper supplements and Vitamin D rich foods. The instability and bone weakness experienced can be reversed within the first few months of treatment. For children who condition was not addressed as quickly, where physical bone deformities are recognizable, then after treatments it will be necessary to surgically correct the problems, like bowing legs. However, for some children who have suffered with the disease for far too long, treatment can still be administered and can cure the condition, but more severe bone deformities may be permanent and not reversible (Perlstein, 2014). Unfortunately, as simple as it seems, there are children living in famine conditions all across the worlds who do not have access to enough food let alone Vitamin D rich foods and many do not have access to any kind of medical care at all. In these cases the quality and quantity of the lives of such children is rather tragic.

Given all of the information and research rickets, unlike so many other conditions and diseases, is treatable, curable and, most importantly, preventable. It is the latter that is so relevant to the discussion of this particular childhood ailment, because it can so easily be removed from the health paradigm of the world. It has been suggested that giving infants doses of Vitamin D and calcium as part of their daily development then it could reduce the instances of rickets quite quickly and it may also help avoid other conditions, as well, like Diabetes (Wagner & Greer, 2008). Many researchers argue that this is not simply a United States issue; thousands of children are sick, being skeletally disfigured and dying of hunger and lack of proper

nutrition all across the globe. As mentioned, India is a country that children are suffering from rickets all too commonly. They suggest that even in these places where growing, purchasing and consuming the best foods is not an option and as yet there is no way to completely eliminate world hunger, even within United States borders, all together, However, it would not be so difficult to provide supplements. Even if the best foods are not available, giving these children access to the proper Vitamin supplements could stem the tide of the prevalence of rickets in the modern world (Craviari, Pettifor & et al, 2008). Both of these research articles offered great hope and positive motivation that the best way to battle world rickets statistics is prevention. It is very rare that a disease, sickness or ailment can be so easily avoided all together; when this happens the medical, scientific and public communities need to listen and act; it can change the lives of children all over the world.

CONCLUSION

Once again, for many people, one of the most saddening and disturbing images are that of children who are suffering from lifelong deformities that will impact their lives for the rest of their lives. This becomes all the more tragic when it is realized that it could have been completely prevented with regular vitamin D supplements. That said there is a call for greater research not just into the particulars of treatments and medication, but on the planning as to how to address a feasible prevention course of action, here in the United States and all across the globe. Understanding a condition, like rickets, is paramount in finding effective solutions, but in this case the center of focus should be on endorsing prevention. The ability to essentially

eradicate a childhood ailment is a huge accomplishment and given the modern research and understanding it is a realistic consideration and should be the overall goal of all involved.

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