

IFAC 2005: Plenary Panel Discussion
Old Questions, Old Answers, New Venues:
Where does food fit with HIV/AIDS care and treatment strategies
Presented by Cade Fields-Gardner

Slide 1:

Good morning to you all here at the Food Aid Export Conference! Last year I was invited to give a very brief talk to introduce basic concepts about the links between nutrition and HIV. This year I am quite honored to be back to expand on some particulars about which I am quite passionate.

I am trained as a clinician. I have spent most of my career working to improve the health and indirectly to improve the lives of people living with HIV/AIDS through food and nutrient provision considering the medical, social, and economic aspects of the disease. In 1987 I worked in the Ward 5A, the AIDS Ward, at San Francisco General Hospital where according to magazines and papers it was the “model for AIDS care.” Showing up on the AIDS ward to do rounds was always an interesting challenge. Some of our patients had their immobile bodies hooked up to ventilator support and were an amazing study of bone and joint structure because there was little to no muscle or fat to hide the details of these anatomical features. Nutritional supplements were routinely sent on patient trays and were stacked in the corners ready to feed those starving residents. During my first encounter, the chief resident attempted to dismiss me saying that it was not a nutritional issue and that they are all just going to die anyway. After strong efforts at education for the physicians and nurses, I was sent my first AIDS patient for evaluation, in a wheelchair with a standing height (though he couldn’t stand) of 6’1” and a sitting weight of 70 pounds. The order sent down was, “go ahead and prove it.” Then a patient in the ward was started on nutrition support by an enthusiastic intern who conceded that nutrition may play a role. This patient was also a bone study poster boy and with the infusion of amino acids gained 9 pounds in one day. Okay, let me tell you that gaining 9 pounds of muscle, or fat for that matter, in one day is physically impossible! Even for those of you who swear that even thinking about a blueberry muffin while on your Atkin’s diet will put 9 pounds on you in a day! What really happened was that the immune system was given fuel and what was available was screaming back into action and causing the massive fluid retention that you see in burn injuries. His immune dysfunction was at least as much compromised by his obvious starvation as by the disease. Unfortunately, it was too much too fast for such a debilitated body and the result was multi-organ failure and death. Even so, after upping my malpractice insurance, I continued to work to educate the staff about the complex relationship between inflammatory disease and nutrition. And, after that, people didn’t always go to the AIDS ward to die, but to receive the labor intense care to allow them hope for living. Around 1989, a defining moment was reached when research suggesting that the timing of death in HIV was more related to nutritional status, particularly the level of the body’s protein stores, than any other issue surrounding this disease. Later studies showed that the overt malnutrition leading to debilitation and death were not a part of the natural history of HIV infection... in other words, it doesn’t have to happen. Well, there are certainly nutritional changes in any inflammatory disease, but the severe undernutrition we saw

was not inevitable... we could do something about it. Fortunately, practice precedes science and we already were busy making that happen in clinical settings in the US, Europe, and other developed and fortunate countries

Entering the international arena of food aid and feeding programs was a real learning experience. It seemed to me that axioms of the clinical world, particularly in HIV/AIDS developed a decade before, were not considered much in the development of a feeding program that was directed toward disease management. Just two years ago I heard many instances of leaders in the food aid community say that there is not a clear and understandable link between nutrition and HIV disease, a solid barrier to getting needed work done. There was and still is confusion about whether all people living with or impacted by with HIV/AIDS need a feeding program. It has been quite a journey so far to work in getting nutrition-related care and treatment integrated into efforts to build successful HIV management programs. So, today I would like to take the next step and, hopefully, help to calm any anxieties about the “unknowns” that we consider axioms in clinical care so that we can all move forward to do the right thing without repeating mistakes we made in the past in a new venue.

Slide 2:

Here are the basic questions. Interestingly, they have been explored quite a bit with the ever-present and ongoing controversies that may never go away. People living with HIV infection are both different and the same as people living with other diseases or living disease-free. The similarities between diseases come from the “infection” part of the equation.

The body reacts similarly to any infectious invader and according to its severity. In addition, HIV infection is unique for its life-long presence and its effects on the immune system (which, by the way, is all over the place and not just the CD4 cells in your blood that you hear about). We know a few things about what HIV can often (but not always) do to the body from a nutrition perspective. For instance (and please remember that I am going to give you an example in the interest of keeping this talk short), the gut is a very important immune organ and barrier to infection. Intestinal tissues are highly dynamic and the speedy turnover of the cells and replacement with new cells is mind-boggling. So when HIV infection is introduced into the gut, chaos can result. Immune cells attempting to attack and devour the virus become dysfunctional once they “get their man” and clog the surfaces that normally absorb nutrients (and medications, for that matter). Gut turnover speeds up and the intestinal cells don’t have the time needed (and they generally don’t need much!) to mature and be fully functional. There are other gastrointestinal changes that mess up your ability to absorb and in many cases you don’t even have diarrhea to show for it! It can be a slow downward spiral of starvation that results. Also, your immune system continues to work overtime as long as it can even during what is referred to as “asymptomatic” phases (notice I did not say “stages”) and even when ARV treatments bring HIV viral load in your blood down to undetectable levels. And, that slow starvation process further compromises immune cell formation and function so that it is worse than a test of CD4 cell count might tell you. So, the word “asymptomatic” is a bit of a misnomer because your body is continually fighting and that means it will need more and sometimes different ammunition.

One very important concept is that when HIV-infection and associated problems are treated there does not appear to be “no turning back” disease progression. Just because a person gets sick as a result of immune destruction caused by HIV doesn’t mean that he/she won’t get better and move back to an asymptomatic phase (though he/she may be a little worse for the wear, just like anyone else). I have quite a few patients in Chicago and Milwaukee who, though happy to be alive and enjoying a reasonably good quality of life healthwise, were a bit pissed off to find that they had to resume careers and find some form of health insurance after being told that “your disability has been reversed.”

Nutrition problems don’t fit neatly into a staging system. A person who is otherwise “asymptomatic” could be starving and a person with diarrhea doesn’t necessarily have intestinal malabsorption. So, you cannot treat nutrition problems in HIV disease according to a staging system, but should treat it according to the problems that exist or that the patient is at high risk for at the point in time he or she is evaluated. Sounds pretty medical, doesn’t it? Going further with this line of thought, therapies should be withdrawn if they are no longer needed and especially if the risk outweighs the benefit. An example of this is when you are given a 7-14 day course of antibiotics it is discontinued after the prescribed course if the infection goes away.

Control of the virus through antiretroviral (ARV) therapy is considered a life-long adventure, though the medications may change and occasionally be discontinued when the risk outweighs potential benefit.

Slide 3:

Here are some old answers to these old questions. What foods and nutrients are needed by people living with HIV?... When should food/nutrients be used as therapy in HIV?... How do we know that it has an impact? ...

So, we need to be clear on what we expect as an impact of nutrition intervention and related disease processes that are both similar and unique. If a person’s nutritional status, and particularly the types of body tissues that process medications and such, has declined significantly then you can expect a reduced impact of care and treatment in general and a potential for “crash and burns” that are seen when a person reacts quite badly to medications and disease problems without enough of the body tissues that are needed to withstand this chemotherapy.

Think of someone that you know who has gone through cancer chemotherapy... it can be quite similar in effect when you are malnourished. Also consider that if programs have limited funding and numbers of people who can be treated, you will want to adequately prepare that person to do the best that their body can to withstand both the disease and the therapy.

On another note, medications and nutrients interact. Nutrients in a pill or sprinkle form are pharmaceutical, not “natural” and should be considered along with other medications and traditional or other remedies when you need the ARV medications to have maximum desired impact on the disease with minimum adverse effects.

Nutrient needs change with inflammatory diseases, such as HIV. We actually know quite a bit about these issues, just not sure of the best answers for the food-aid venue at this point. For instance, iron deficiency anemia is of great concern in many of the populations who are vulnerable to HIV infection, particularly women of child-bearing age. However,

iron supplementation recommendations have varied widely because it is known (which is the word we use when research strongly suggests something) that iron supplementation in chronic HIV infection can do more harm than good, increasing risk for opportunistic infection and ultimately speed up the demise that we are trying to avoid. Even if you do provide iron supplements to someone with symptomatic HIV infection, it may cause damaging toxic effects before it can even get started on reversing this type of anemia. So the problems in this setting are “triaged” or prioritized according to which problem you might expect to kill the person first. And, this aspect of the disease along with a sensitivity and potential for toxicity with the supplementation of zinc, selenium, and various other vitamins and minerals when chronic inflammation is a way of life, makes the issue of micronutrient supplementation more complex and problematic than simply seeing if we can increase levels of nutrients in the blood.

If possible, we should include both subjective and objective items... kind of a cross check. I have had the opportunity to implement some pilot projects that introduce some monitoring along these lines. Interestingly, subjective data does not always coincide with the suggested impact of objective data...

Also, it will help us to match our interventions with real needs. Feeding programs tend to be general and may assist a person with HIV to gain weight, whether it is needed or not, even to the point of obesity ! I would bet that you don't build that impact in as an objective!

Slide 4:

You also need to decide why you intend to provide food or other nutrition support. I remember talking with one of my friends who is pretty savvy about the nutrition issues in HIV and has much experience with feeding programs. I was all wound up by what could or likely couldn't be accomplished with the food rations planned and he reminded me that if the goal is to improve food security then even feeding it to the goats may yield some positive results. It makes sense to me that general feeding programs may be used to assist food insecure populations whether or not impacted by HIV, but it would probably be more difficult to prove a health benefit when that is not really the intent or design of such programs.

Slide 5:

A program that is intended to improve health and specifically nutritional status in the interest of managing the disease and improving function may be better accomplished by a program that integrates nutrition into care and treatment efforts. This means that HIV infection will not qualify a person for food intervention (though education and evaluation should be included for all who may be in the targeted population). Just as antibiotic therapy is meant to reverse opportunistic bacterial infection, food intervention in this case is meant to reverse nutrition-related problems. And, to review from last year, this should be triaged, or done in the order of priorities: safe and adequate water is most important, calories are second, protein is a very close third, and micronutrients can be most effective when the first three are taken care of.... Micronutrient supplementation without shoring

up priorities may end up like placing a small bandage on a massive gaping wound: of limited success with unlikely long-term value.

This is what we mean when we say that it is important to integrate food and nutrition into care and treatment... welcome to the clinical world! If you get clinical about food programs as therapy, you are likely to encounter a few things: First, your program will be more strongly targeted and more likely to have desired outcomes that you can track; second, you will need to invest in clinical expertise to keep you on track. The learning curve may be steep, but at least it will be clear!

Slide 6:

So, now we can work on some answers to these old questions in this new setting. Start with 4 Ws and 1 H. Who is targeted for intervention? What should be used? When should it be used? Why should it be used? How should it be done?

Slide 7:

See slide.

Slide 8:

Is this a little daunting? Like any new skill or knowledge, you gotta start somewhere. Not starting at all will keep programs ineffective and of questionable value for the money and effort spent. In addition to health and nutrition impact, cost-effectiveness and cost-benefit studies will help us to find the best paths (there is not likely to be a single path for something as complex as HIV...). We know it is do-able and the nutrition part of the health care equation is the most do-able of all!

Slide 9, 10:

See slides.

Slide 11:

The reason I have been so clinical with you today is because of the reality that HIV is not a simple disease. It is not only political, social, and economic in nature, the medical aspects of the disease are also complex in their own right. When we simplify things too much, we risk failure and harming the people we intend to help. This is a very do-able aspect of efforts to manage HIV disease in the world. Vision is important and careful planning and cross-checks to be appropriately accountable will help history to remember our efforts as a good thing.

Thank you for your time today!