Transcript Details
This is a transcript of an educational program. Details about the program and additional media formats for the program are accessible by visiting: https://reachmd.com/programs/clinicians-roundtable/influenza-vaccination-benefits-to-the-elderly/3712/

ReachMD
www.reachmd.com
info@reachmd.com
(866) 423-7849

Influenza Vaccination Benefits to the Elderly

CONTROVERSY THAT EXIST IN VACCINATION AND BENEFITS

Influenza vaccination may not be protecting the elderly as much as we have thought.

You are listening to ReachMD XM 157, The Channel for Medical Professionals. Welcome to the Clinicians Roundtable. I am your host, Dr. Maurice Pickard and joining me today is Dr. Lisa Jackson. Dr. Jackson is Research Professor of Epidemiology and adjunct research professor of medicine at the University of Washington School of Public Health. She is also senior investigator in the Group Health Center for Health Studies in Seattle, Washington.

DR. MAURICE PICKARD:

Thank you Dr. Jackson for joining us.

DR. LISA JACKSON

Well thank you for having me.

DR. MAURICE PICKARD:

To begin with, could you describe the new findings recently published on influenza vaccination in lancet.

DR. LISA JACKSON

Well, that study, my colleague, Michael Jackson and I evaluated whether adults with pneumonia appeared to have been more or less likely to have received influenza vaccine than adults without pneumonia. So, the question we were attempting to address is whether influenza vaccine appeared to reduce the risk of getting pneumonia among seniors and our study was quite a bit different from studies that have been conducted in the past to answer this question because we were couple of steps further I would say. For one thing, we did not rely only on diagnosis codes to document that the seniors had pneumonia, we actually had it validated by radiograph review or by clinical chart review. Second, we actually reviewed the medical records for all our cases of pneumonia and persons without pneumonia in order to determine whether they had medical conditions such as heart disease and lung disease, and if they did have severe those conditions whether they had limitations in ability to walk or bathe themselves or eat, whether they had conditions such as dementia, etc. Because in previous studies we have identified those factors as being potentially important. And lastly, we used somewhat novel

methodology where we evaluated persons not only during influenza season, which is our main period of interest when we are looking at influenza vaccine, but also before influenza starts and that may seem sort of counterintuitive, but the purpose of looking at people with pneumonia and those without pneumonia in the period before influenza starts is to identify whether there are differences in the types of people, who get vaccination compared to the people who do not get vaccination. Because those types of differences could create bias and influence the results that we would then find influenza season.

DR. MAURICE PICKARD:

So, doing this study differently were your results any different than what most of our audience have kind of come to feel about influenza vaccination in people over 65.

DR. LISA JACKSON

Yes, we found no evidence that influenza vaccination reduced the risk of pneumonia, either all pneumonia, we included both outpatient cases and hospitalized or when we restricted to looking at just hospitalized cases we did not find any effect of vaccination and so forth. So, our study did not confirm any benefit of influenza vaccination against pneumonia in this population of seniors who are also restricted by the way to be persons without immunocompromising conditions, so without serious cancer, without renal failure, and things like that. So, it is a population of people that we would expect to be able to benefit from the vaccine as the vaccine did produce the benefit.

DR. MAURICE PICKARD:

You mentioned that you study not only during the influenza season, but also at other times when you might not have the same results as far as deaths in hospitalization. What happened in the other seasons?

DR. LISA JACKSON

Well, in the period before influenza season, we actually found that persons who got an influenza vaccine were less likely to get pneumonia than other persons. So, we know that can't really be an effect of the vaccination, because the only way the vaccine works is by preventing influenza infection. If there is no influenza around, then the vaccine itself is not doing anything. So, what we are seeing there is a difference in the health status of people who tend to get vaccine as opposed to the people who tend to decline vaccine and you know we have seen this kind of healthy user bias or healthy vaccinee effect type of bias and other evaluations like hormone replacement therapy and differences between people who take vitamins and those who don't for example and so forth. So, this type of problem with influenza vaccine analysis is common to other evaluations are preventive interventions and therapeutic sensing in population. So, then what we did was we started out and we had this difference between people that were due to their personal characteristics of baseline health status and then we incorporated in our model factors that we identified from the medical record review like lung disease and severity of lung disease and whether they were on home oxygen for example for their lung disease, heart disease and severity. These with certain medications and we were able to adjust and control the difference, so that we eliminated the differences between vaccine and vaccinated persons before influenza season by including those factors in the analytic model. We then applied the same factors to the analytic model during the influenza season and that's where we found no effect during influenza season.

DR. MAURICE PICKARD:

Is it possible that people with cancer or heart disease go to their doctors more often, take better care of themselves, more likely to get vaccination and actually may be despite their comorbidity actually be fitter and instead of looking at things like we are used to things that

appear on our laboratory chart or an x-ray, we should be looking at people who are frail or fit. We are beginning to look at people with cardiovascular disease and wondering why some of them do so well despite all their laboratory evidence to the opposite and yet they may be fit and we should may be looking at activities of daily living ADLs like you mentioned as really something that we should be paying more attention to.

DR. LISA JACKSON

Yes, exactly, I mean the whole story is much more complex than I think we have first appreciated. For one thing, seniors are incredibly heterogenous group of people. One given 75-year-old can be preparing to climb <_____> and other is bedridden. One person with heart disease as you say is doing very well, really keeping up with their health, going to physical therapy and other is not taking their medications and declining in health. You know it is very difficult to completely account for such nuances and analysis, which is why we feel like looking at this before influenza season is very important because that's a very objective way of getting a handle on how big a problem we have with these types of differences. The other thing is what we are interested in is the fact that they are creating problems for us are not only things that are related to the outcome in this case pneumonia, but also things that are related to the likelihood of getting vaccine and we have tended to sort of not put as much emphasis on factors that effect whether people get vaccinated, but you have to have both of those things in order for the problem to occur on the study. The factors that you mentioned you know inability to ambulate, may be lack of cognitive function are clearly related to how likely a person is to become vaccinated. I mean when you think about it, influenza vaccine is sort of unusual intervention in that it comes on at certain applicable time, usually sometimes during October vaccine is first available, 90% of vaccine is given out within the next 4 weeks just about and so if you are seeing you had to be certainly on the ball, you have to know when vaccine is coming out, you have to know where to go to your doctor's office or the drug store whatever to get and you have to have some motivation to do so. So any factors that both affect your health and your ability to seek vaccination for yourself can interject a bias into our evaluation.

DR. MAURICE PICKARD:

You brought up earlier about the immune response to vaccination, we know the elderly don't respond to any kind of vaccination as well as younger age groups, do you think we are giving the proper dose. There has been some evidence that the dose might have to be 4 times as great to somebody over 70 as it might be for say somebody who is 40.

DR. LISA JACKSON

Well, I think that's definitely an area that should be pursued and I think you are exactly right. I think it's sort of legacy of the past that we get the same dose to everyone over 3 years of age when there are known substantial difference in immune response as persons get older. So, if the higher dose were more effective, that would be a relative easy way to improve effectiveness in seniors because we could use the vaccine that we already have. Now, I would need to do some more evaluation to determine whether that would in fact be beneficial, but the studies to date showing are greater you know antibody serologic response to higher doses of vaccines suggest that could be a promising avenue to pursue.

DR. MAURICE PICKARD:

If the frail don't get vaccinated, should we be looking at other strategies? Certainly something that comes to mind is the very low rate of vaccination and healthcare providers, who are taking care of these frail people. Should there be some response to that? Should there be mandatory vaccination in the workplace? Of course, with an opportunity for informed declination.

DR. LISA JACKSON

Well, I think that you know increasing the healthcare provider and vaccine coverage is an area of active pursuit of thorough professional agencies and the CDC, but to obtain a substantial overall impact in seniors by reducing their risk of being exposed to influenza, so apart from the ability to you know vaccinate them and protect then if they should come in contact with influenza, then other approach is to you know sort of put them in a bubble and prevent them from having a chance to come in contact with somebody with influenza. You really need to know a lot more about how this influenza virus circulate in the population at large, who are predominant spreaders, and how it gets here from one place to another and what we suspect is that really children, especially school age children, are one of the primary transmitting agents of influenza and so that's why you know there are new recommendations this year to vaccinate all children up to 18 years of age in order to dampen the transmission in the overall population. It is little unclear what level of coverage you need to achieve to get that kind of effect and what kind of decrease if any you will see in the senior age groups as a result of more widespread vaccination of children.

DR. MAURICE PICKARD:

Archives of internal medicine in 2005 commented on despite tripling the amount of people, who are vaccinated between 1980 and 2001, the number of deaths has not changed. Should the CDC step back and change their recommendations as far as vaccinating the elderly.

DR. LISA JACKSON

Well that was a very nice study done by my colleague <_____> Simonson and what that is showing is a lot of observational studies, mini studies that simply compare people, who get vaccine and those who don't have reported that the vaccinated group was at greatly lower risk of death from any cause, 50% lower risk of death during the winter from any cause. If that's true then as we give more and more vaccine to seniors, you would expect to see a decrease in all cause mortality, which was not seen. The problem is that those results are not plausible, but those results tell us is that there is this problem about differences in people, who get the vaccine and those who don't. So it is not getting the vaccine that reduces the risk of death by half, is the fact that seniors, who are at much lower risk of death are more likely to get the vaccine, but the true impact that influenza vaccine could have on all deaths depends on what proportion of all deaths are caused by influenza and we believe that although influenza is an important cause of wintertime mortality, you know there are lots of other causes of mortality that act throughout the year. So, during the winter, influenza probably causes only about 5% of all deaths in seniors and that can vary a bit, but that's roughly the proportion. So, if you had a vaccine that was perfect and prevented all those deaths, you would expect to see a 5% decrease in all deaths as a result of preventing the fraction due to influenza. So, really you could have a great vaccine and you have no detectable change in death overtime, as you increase vaccination rate because it is a sort of needle in haystack or signal to noise problem, your true factors are relatively small proportion of the whole pie that you are looking at would all cause death. So, I don't think the CDC needs to change the recommendations on the basis of the fact that we haven't seen notable declines in all cause mortality, but I do think that we need to recognize that those studies reporting such fantastic effects against all cause mortality are not due to true vaccine effects, but due to the healthy vaccinee bias.

DR. MAURICE PICKARD:

You know today we have been talking about the controversy that exist about the vaccination and its benefits that may be possibly been overestimated, but certainly no one can deny that being vaccinated has helped millions of people. I think we should continue as Dr. Jackson suggested to investigate and to look at all the clinical research in this area as it unfolds for us. I want to thank Dr. Jackson for being our guest today and we have been discussing this controversy that exist about influenza vaccination.

I am your host, Dr. Maurice Pickard and you have been listening to the Clinicians Roundtable on ReachMD, The Channel for Medical Professionals. To listen to our on-demand library, visit us at reachmd.com. Thank you for listening.