



Incidence of infective valve endocarditis as after antibiotic prophylaxis guidelines changed—there is a change

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From 2007 to 2009, the guidelines for endocarditis saw a major change in the prescription of antibiotic prophylaxis to prevent infective endocarditis (IE) in the United States of America, continental Europe and the United Kingdom (1-3). Antibiotic prophylaxis became much more strict and only a select group of patients were still eligible for prophylaxis (1-3). There was no evidence that chemo-prophylaxis in patients with non-congenital, non-prosthetic heart valve disease would prevent the occurrence of IE, which still ranks as one of the deadliest infectious diseases in the western world. We applauded ourselves that science and a lack of evidence of the effectiveness of prophylaxis had prevailed.

In the years following this decision, we saw the incidence of IE rise. It rose in the USA, in the United Kingdom and in continental Europe and in many other places in the world (4-7). We told ourselves it was due to an aging population, more invasive medical procedures, or a combination of both as age and medical treatment are much like two old friends walking together as risk factors for many diseases—especially IE. Although some of us started suggesting we might be wrong in such a strict use of chemo-prophylaxis for the prevention of IE, they were honed at because where was the evidence?

The year 2015 arrived and the European Society of Cardiology was preparing their new guidelines for the diagnosis and treatment of IE. Sometime before the guidelines came into print, two studies appeared that did show that not only the incidence of IE was on the rise, but that when prophylaxis guidelines became much more strict, there was a sudden increase above the expected historical

trend in Streptococci-mediated IE (4,5). And Following that, a strange thing happened. Instead of trying to weigh costs and benefits of prophylaxis, it was argued that the evidence was at best circumstantial. More likely it was due to, again, a changing population and healthcare-related IE. Not long afterwards, a third study confirmed the results of the previous two studies using more or less the same methodology (6).

And so, we have arrived at 2019. Guidelines on chemoprophylaxis for IE are just as strict as they were when we designed them between 2007–2009 (8). In the meantime, we have seen a rise in IE in almost all studies. Several of these studies also showed an increase in the streptococci-related IE following the guideline changes (4,6). What we have not seen is a decline in IE. Nor have we seen an improvement in survival of patients suffering from this devastating disease. Still, despite an increasing number of studies that show not only an increase in IE incidence, but also a relationship between stricter IE chemo-prophylaxis and an increase in preventable IE, we still consider the evidence not to be enough to change the guidelines back to what they were. Another thing that we have also not witnessed is patients suffering from chemoprophylaxis with lethal consequence (9). It is safe with very little patient harm or discomfort and is applied in many medical settings, often with very little evidence to back it up. In fact, the evidence in the case of IE is actually quite strong when comparing it to other uses of chemoprophylaxis. In short, we do very little harm in giving patients chemoprophylaxis and we probably do a lot of good in giving patients chemoprophylaxis to prevent IE from rearing its ugly head.

We should therefore be brave and admit that we might have been wrong. We should reinstate chemoprophylaxis for all patients with valvular anomalies to prevent IE from affecting these patients at risk. We should make all possible effort to prevent this disease from happening, because we have great difficulty in treating it and the toll that patients have to pay is high.

Yes, not all evidence points in the direction of a beneficial effect of chemoprophylaxis, but a lot does. Very little evidence points in the direction of a detrimental effect of chemoprophylaxis on patient care. We have a rare opportunity to conduct an almost worldwide study in reinstating the chemoprophylaxis as it was before 2007 and then see what happens to the incidence of IE. In doing so we can make a major step forward and hopefully settle an already very long debate, and in this way, also halt an even further increase in IE.

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Footnote

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