**Can we do IV Oral switch in Endocarditis Treatment?**

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*This is based on:*

**Partial Oral Versus Intravenous Antibiotic Treatment of Endocarditis**

Link: HERE

**Why the paper?**

* Endocarditis is commonly listed as one of the exclusion criteria to have IV to Oral switch. However, its long duration of intravenous  treatment makes oral conversion/step-down an attractive target for AMS strategy which could potentially reduce the length of hospital stay, and lower both line related complication as well as cost associated with IV therapy.

**How did they do this?**

**Who was eligible?**

Adult patient with Left sided Endocarditis ( including prosthetic valve) and blood culture positive for streptococcus, Enterococcus faecalis, Staphylococcus aureus, or coagulase-negative staphylococci.  The patient BMI must be less than 40 without reduction in the gastrointestinal absorption. However, there was no details provided on how to judge if patient gastrointestinal absorption was sufficient.

**When was oral therapy be considered?**

Patient must have received at least 10 days (or 7 days after valve surgery) of IV therapy and still need at least 10 days antibiotic therapy. The patient also must be in stable condition, that is afebrile for at least 2 days, CRP < 20mg/L or drop in > 25% of peak reading or, WBC < 15 x 109/L. In addition, transesophageal echocardiography must be performed and showed no abscess formation or abnormal valve

What are the oral therapy used?

The oral therapies were given according to the microorganism, the susceptibility as determined by disk diffusion according to EUCAST guidelines and MICs as determined by Etest or VITEK2 (bioMérieux)

As noted below antibiotic of moderate ( e.g Amoxicillin) to high bioavailability ( e.g Rifampicin / Moxifloxacin) were used.

And some option was not necessary cheaper if one was prescribed linezolid in our local setting.

**What does it takes to continue with Oral therapy**

* Availability of drug monitoring to ensure the adequate plasma levels is achieved with oral antibiotic, on day 1 and day 5 of initiation.
* Follow up patient 2 to 3 times per week. In this study, none default follow up. which spell absolute compliant and obedient patient.
* Repeat TEE before completion of the treatment course with satisfactory treatment response at physician judgement which was not defined in the study.

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**The success story...**

This study was able to show the shift to oral therapy was non-inferior to IV only therapy. At 6 months, there was no significant difference in the outcome in all cause mortality, unplanned cardiac surgery, embolic event and relapse of bacteremia.

After randomization, the hospital stay of the group assigned oral therapy was only 3  days (IQR 1-10), compared to 19 days (IQR 14-25) in the group with IV therapy

[ P<0.001].

**Can this study be translated into local practice as AMS strategy?**

* The result is promising for Streptococcus endocarditis which accounts for half of the cases studied. However, further studies are still required before this can be applied to IVDU population which is under represented ( only 5 is enrolled) and the same happens to Staph aureus (22%) and MRSA endocarditis.
* If at all, one still need to select oral antibiotic choice according to local antibiogram and MIC.  Proper cost analysis, individualized patient selection with consideration of drug interaction and side effects still apply.