How to Interpret a Wrist Pulse Oximiter

There are Two Channels to this device.

1) Pulse – measured heart rate
2) Oximetry – measures blood oxygen

Context: To make a decision on what to do next, need contextual information.

1) Patient information (height, weight, age, neck size, BMI)
2) Need to know what MAS is being used and date of insertion
3) What were the chief complaints (CC) or symptoms at beginning of treatment
4) Are the CC gone (is the patient satisfied with their sleep?)
5) Epworth Sleepiness Scale (ESS) and Patients Global Impression of Changes Scale (PGIC)
6) Is the MAS advanced as far as possible
7) What was this study for?
    a. Final
    b. to see if advancement is needed
    c. other relevant notes

Possible options: Based on that context and the study, communication to staff (or patient) of the next step is possible.

1) Advance MAS and repeat HST
2) Send patient to MD for final PSG or HST now
3) Advance MAS and send to MD for final PSG or HST
4) Add rubber bands if type of MAS allows
5) Drop the pin or check the posterior pads for TAP
6) Send to MD for PSG and consider Combination therapy (add CPAP)
7) Other

Interpretation of Data:

1) The first thing to look at is the time under 90%. Conventional wisdom and growing research indicates that less than 1% of the time under 90% is acceptable. Any more than that, the OSA is not resolved.
2) Then comes the SpO_2 (Peripheral capillary oxygen saturation). Look for artifacts or one time spikes to a low O_2 level. Cross those out as artifact. Re-adjust the oxygen nadir (lowest point) according to the graph.
3) Next is the heart rate variability. Look for a HR line on the graph that is relatively smooth (like a fine saw blade) and calm. It should be fairly level across the graph with perhaps a slight decline. If there are many jumps to a higher HR throughout the night, then this indicates that respiratory effort is still going on. Remember that some medications make this measurement void.
4) Then last look at events. This has to do with how the auto scoring is set up. Most software by default, will score an event if the O_2 levels drops 4% from normal (96%). Preferred is a 3% desaturation (this would be close to the AHI in a PSG). Look for the "index," which means the average events per hour all night. But also look at how long the events are. Usually they are 20 seconds or less in length. If longer, then that means that one can have few events, but they can be long (hypopnea) in length, indicating long times of limited flow.

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