

Hi,

I've had some feed back that there is some confusion regarding the Bi Vent mode of ventilation. With the experience I've had with Bi Vent, I think it will work great for kids who are having oxygenation issues. The goal for this mode is to increase your mean airway pressure (MAP), like the HFOV, MAP is maintained at a high level and small changes in pressure move the lungs. In Bi Vent those small changes in pressure can result from pressure support while in the time at PIP (Phigh).

Basic Settings:

- Pressure High (Phigh) [absolute value, NOT level above PEEP], PEEP, FIO2
Remember in this mode, the PIP and the PEEP are NOT added together, if you set a PIP of 20, you get 20 regardless of what your PEEP is set at.
- Time (at Phigh), Time (at PEEP), Inspiratory Rise Time (sec)
This is how you're going to set your rate, and increase your MAP. If you set a long inspiratory time (time at PIP or PHigh) and a short expiratory time (Time at PEEP), you can drive up your MAP with out increasing your PIP. With the active exhalation valve, the patient can set their own rate, i Time, and volume while at the high PIP, as well as while at PEEP. To set your rate, you have to adjust the i Time and the time at PEEP, in the box in the upper right corner of the screen you can see the rate and the I:E ratio. To drive up the MAP chances are your going to need and inverse I:E ratio. If you try settings that does not work, there is a box in the lower left corner marked as previous setting, hitting that will take you back to the last mode you were in. One of the advantages I see with this mode is the periodic drop to PEEP allowing interthoracic pressure to decrease, which doesn't happen on the HFOV.
- Trigger Sensitivity, Inspiratory Cycle-Off
These setting are set as you would in any other mode.
- Pressure Support level above Phigh, Pressure Support level above PEEP
This where I think some of the confusion comes in at. Pressure support is pressure support, is pressure support. I think it should be used to overcome the WOB caused by the ETT. Your patient is going to spend most of their time at the PIP (PHigh), so there should be some PS to decrease WOB. How much? I think I would use just a little, 2 – 3 cmH2o. PS above PEEP should be set the same as usual. Remember the PS values are ABOVE the PIP and PEEP.

OK, where to start? Remember the goal is to increase the MAP to improve oxygenation. You already have a rate, PIP and PEEP. Change the I&E time to get the rate you want, the more time spent at the PIP will increase the MAP. This mode is not HFOV, you can not change the just CO2 or just the PO2. Like any conventional mode of ventilation, changes effect the over all minute ventilation