

The benefit to measure blood pressure

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Picture: pbantermedia / Bettina K.



Beate Egner is both a founding and a board member of the Veterinary Blood Pressure Society, a society comparable to the German Hypertension Society, acting worldwide.

Blood pressure is a routine procedure in humans and has been a fast evolving topic in veterinary medicine in the past decade. It is an easy to obtain parameter to detect particular like kidney and heart problems in an early stage.

It further is key for a safe anesthesia and post-surgical monitoring. While it is an established method in companion animals and particularly also horses it has not been part of the examination or monitoring of birds of prey due to a lack of adequate technology.

This gap is filled now. With HDO (High Definition Oscillometry), the newest arrival in blood pressure measurement devices, a technology has been patented which will revolutionize the world. HDO is analysing the patient during the first reading and than adapts itself towards the required pre-settings. This way even excited birds of prey and other birds like parrots (with heart rates way above 300) can be measured and analysed visually (Fig. 1). The curves tell the veterinarian not only systolic (the higher value, like: **120/80**) and diastolic (the lower value, like: **120/80**) blood pressure, which indicates for example sufficient or impaired heart function (normal or low values) but also points out disease which increase blood pressure, leading to hypertension (too high pressure). Hypertension is dangerous as well as it damages different organs like the eyes, the heart, the brain and the kidney.

How about birds of prey? Do we know something about such problems? We do! And blood pressure related problems can easily lead to a decreased performance.

What indications are there currently for a HDO blood pressure measurement?

- annual health check (to detect disease early)
- examination in birds with suspected heart or kidney disease
- health check in birds with insufficient performance
- anesthesia monitoring
- performance monitoring (blood pressure is one of the key performance parameters)

How to take a reading?

The cuff has to be placed either around the lower or the upper leg. Placement should be tight but without any pressure on the limb (Fig 2). The bird has to be held in a way that it will not move too much (fig. 3). During anesthesia no additional precautions have to be taken care of (Fig. 4). When the cuff is placed, the readings can be started immediately. At least 3 readings should be taken and averaged.

Each reading creates the values of systolic and diastolic pressure and the pulse amongst many other information, valuable for the veterinarian to judge the health situation in more detail (Fig. 1).

Summary

Since blood pressure can now be measured also in birds of prey, disease as well as mal-performance can be investigated much easier. Further HDO provides an easy to use monitoring system which will add tremendously to safety during surgery but also post-surgically.

This new system works in awake birds as well as during anesthesia and allows besides the judgement of blood pressure also investigation of the peripheral arterial situation (like vasoconstriction or atherosclerosis) and the heart function. Studies are initiated and will bring more light into the many benefits of measuring blood pressure in birds shortly.

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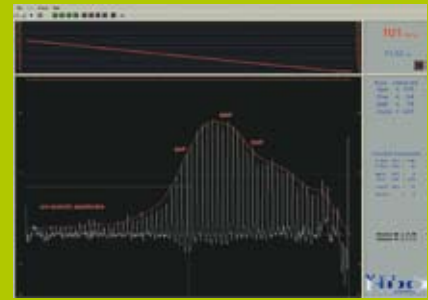


Fig. 1: HDO graphical analysis of blood pressure and the cardio-vascular situation



Fig. 2: Cuff position at lower and upper limb



Fig. 3: Fixation technique when measuring awake birds



Fig. 4: HDO measurement during anesthesia