

# BEVA Congress 2024

## Clinical Research Sessions Abstract Guidelines

**Abstracts must be submitted between Thursday 18 January and 8 February 2024**

**The Scientific Programme Committee of the 2024 BEVA Congress invites authors to submit scientific abstracts for inclusion in the Clinical Research Sessions at Congress.**

The aim of BEVA's Clinical Research Abstract sessions is to provide opportunities for clinicians and researchers to present high quality reports and research focused on equids that leads to improved clinical practice. Abstracts allow the sharing of work in progress and preliminary results as well as completed studies. Relevance to clinical practice is important to the BEVA congress audience and will be a key factor when we make our final selection. This year, for the first time, we are introducing a new option, clinical descriptive abstracts, which are intended to allow clinicians and practitioners to report observations that they have made in clinical cases that shed light on possible harms, treatment outcomes or approaches to diagnosis and therapy that might be of interest to BEVA congress delegates.

Those authors whose abstracts are accepted will be invited to present an oral presentation at Congress. For both abstract formats, oral presentations will be 10 minutes in length with an additional 2 minutes for questions. More advice on our requirements for oral presentations will be provided in due course to those authors whose abstracts are selected for presentation at Congress. **All accepted abstracts** will be considered for publication in a special online supplement of Equine Veterinary Journal. Both Clinical Research Abstracts and Clinical Descriptive Abstracts are eligible for a range of awards for the most informative pieces of work. Details collected with submissions will inform eligibility for specific prize categories.

The presenter of each accepted abstract will receive free registration at Congress for the day of his/her presentation. However, travel, subsistence and accommodation expenses will not be offered. Presenters are, of course, very welcome to register separately for other days of Congress.

### **Clinical Research Abstracts (CRA) Content and Format** (*Examples can be found below.*)

The CRA must be written in English and be no more than **300** words with the following headings:

- **Background:** The background behind the decision to choose the subject to study.
- **Objectives:** The statement that is being tested, and is testable by the methods (below); or the original aims and study deliverables.
- **Study Design:** Concise statement of the study design.
- **Methods:** Brief description of materials and methods, and methods of testing hypotheses.
- **Results:** Brief highlights of the results obtained. When commenting on significant comparisons, **p values alone are not sufficient**. You must include either mean  $\pm$  SD or median & IQR for each group, or express the mean

difference with 95% confidence intervals. 95%CI must also be included for odds ratios. Lack of data is the most common reason for rejection of abstracts.

- **Main Limitations:** Concise statement of limitations and source of bias.
- **Conclusions:** Conclusions drawn from results.

#### **Clinical Descriptive Abstracts (CDA) Content and Format** (*Examples can be found below.*)

The CRA must be written in English and be no more than **500** words with the following headings

- **Background:** The background behind the decision to choose the subject to study
- **Aim of Report:** Your goal in presenting this report, what do you hope Congress delegates will learn from it
- **Case Population and Setting:** Details of study time-frame, location of practices or clinics involved, anonymized in reviewers' copy
- **Intervention** (if applicable): Description of the novel treatment or modified or novel technique under study
- **Data Collection:** How you obtained data, if relevant to the report include details of who provided interpretation of materials such as cytology, histology and diagnostic imaging. Usually these individuals should be included as co-authors or acknowledged in declarations.
- **Clinical Observations:** Summary of your main findings
- **Main Limitations:** Concise statement of limitations and source of bias.
- **Conclusions:** Conclusions drawn from observations

#### Files for reviewer use

For CDA (but not CRA) you can upload supplementary files for reviewer use – these might include Figures to support description of case population and setting - flow charts, illustration of typical clinical problem; Figures to support description of intervention – photographs/diagrams of technique or approach; Figures to support data collection – timelines, techniques; Figures to support clinical observations - gross images, diagnostic imaging, anatomy, surgical findings etc. and Summary tables to support clinical observations. These files are intended to help reviewers understand the study particularly if you are concerned that the approaches, process or treatments are difficult to convey in only 500 words but you should bear in mind they will not be published in the supplement of EVJ so the abstract must be understandable without them. We anticipate that these figures or tables might be included in your oral presentation and reviewers may give you feedback to enhance your presentation, if the CDA is accepted.

#### Calculating word count and references

Do not include the title, author lists and institution details or declarations in your word count but do include any references in the word count. References can be included if they are absolutely essential. Use bracketed numbers [1], [1-3] etc to cite references in the order that they appear throughout the body of the abstract. Reference format must include its author list, article title, journal, year, volume and page details. For details of reference format go to <https://beva.onlinelibrary.wiley.com/hub/journal/20423306/homepage/forauthors.html>

### Declarations and Ethical Guidelines

All CRA and CDA submissions must adhere to the Ethical Guidelines outlined in Equine Veterinary Journal's Author Guidelines available at <https://beva.onlinelibrary.wiley.com/hub/journal/20423306/homepage/forauthors.html>, and make transparent and complete declarations of:

- Funding (Section 4.8)
- Acknowledgements (Section 4.10)
- Competing Interests (Section 4.7) Take care to include your co-authors' competing interests as well as your own.
- Ethical Animal Research (Section 4.5) i.e. details of ethical framework for data collection from both animals and, if relevant, humans.
  - Ethical review is required for studies involving the experimental use of animals and prospective trials in client-owned animals
  - Ethical review also applies in studies in which the data are collected from humans such as, for example, views and information from surveys and questionnaires.
  - Ethics Board Approval is usually associated with a reference number and this detail should be included in the declaration.
  - Clinical Audit and retrospective case series using information from the clinical record do not require client consent.
- Informed Consent (Section 4.5.2) Consent applies not only to use of client-owned animals, but also applies in studies in which the data are derived from humans such as people who complete a questionnaire or contribute to a focus group. We expect to see consent when tissues from post-mortem exam are used but do not expect to see consent if you have studied a micro-organism regardless of whether that organism has been isolated during clinical procedures or not. Clinical Audit and retrospective case series using information from the clinical record do not require client consent.
- Key Manufacturers. Where abstracts describe a study relating to any specific commercially available product (for example a treatment trial, a study looking at the validity or accuracy of a diagnostic test or a treatment device etc), the manufacturer's name and a link to their website must be included. It is not necessary to include manufacturers' details for products which were used in the methods but are not directly related to the primary study objective (for example software, biochemical analysers, diagnostic equipment which was used but not directly studied etc).

If appropriate, state "not applicable" against the relevant heading. During the submission process you will also be expected to certify that your abstract complies with Equine Veterinary Journal's Antimicrobial Stewardship Policy (Section 4.6).

The declarations will be published within a section at the end of each abstract. Do not include it in the main body of your abstract or word count. **You will be required to make the same declarations, along with any other acknowledgements, at the beginning of your oral presentation at the Congress.**

### Advice, Pitfalls & Common Errors

- Abstracts describing a study using clinical cases that lack confirmed, definitive diagnoses are not likely to be accepted.
- Abstracts that describe data as pending are not acceptable.
- Vague statements such as “the results will be discussed” will not be acceptable.
- Preliminary data from an ongoing study can be used. But, you cannot submit another abstract next year on the same data (even if you have more data and it is more accurate), unless the abstract is about a completely different set of data or a different part of the project.
- You must put actual data in the abstract: do not submit the abstract expecting to get the data by the time you present it at the meeting.
- Data presentation: When data is presented it should be presented in an appropriate fashion. See ‘results’ section above: When commenting on significant comparisons, p values alone are not sufficient. You must include either mean + SD or median & IQR for each group, or express the mean difference with 95% confidence intervals. 95%CI must also be included for odds ratios. Lack of data is the most common reason for rejection of abstracts.
- If you have performed a clinical audit, we encourage you to complete all steps in the audit cycle.
- Failure to include appropriate information on owner or participant consent will lead to abstract rejection
- The most common errors we encounter when reviewing abstracts are that authors fail to provide a consent statement when (1) their study involved work on tissues/fluids derived from post-mortem examination or taken as excess during clinical sampling and (2) the study involved prospective research on clinical cases.
- BEVA and EVJ understand that retrospective review of clinical material is often performed without the owners’ explicit consent for the research. For retrospective review of data derived from medical records, lack of explicit consent is often acceptable, particularly where the owners were made aware in general terms that data might be used for research. If owner consent for the study was given, this should be stated; if not, explain whether owners were aware that research might be performed or not.
- For post-mortem samples, as a minimum, we expect to see that owners gave consent for post-mortem examination and were informed that tissues may be retained for research.
- We also commonly see errors made when the study does not involve animals but the research involves data from humans (for example collecting views from vets, vet students, clients or the horse-owning general public). Ethical review is very important for “human data” studies because it is unethical to ask people to give up their time to participate in all but the best-designed studies.
- Ethical review is generally available through an institution (University) and may be accessible via other sources. In the UK the Royal College of Veterinary Surgeons (RCVS) offers ethical review via their Ethical Review Panel (<https://www.rcvs.org.uk/who-we-are/committees/standards-committee/ethics-review-panel/>) ETHICAL REVIEW MUST BE PERFORMED PRIOR TO COMMENCEMENT OF THE STUDY.

- If an ethical review committee has informed you that approval is not required for your study, this detail is important and should be included in the relevant section of our submission form.
- For authors based outside UK, ethical review committees may not be so easily accessible outside Universities and institutions. If this applies to you, you should provide as much information as you can about your circumstances and access to ethical review committees in the relevant section of our submission form.
- Owner and human-participant consent can always be obtained regardless of whether your study has undergone a formal Ethical Review or not.

#### Preparing your abstract for submission

Use single line spacing and Times New Roman 10 point font; do not indent paragraphs. Tables, graphs and figures cannot be published.

Do not begin a new line for each section of the abstract.

A short title (maximum 35 characters) should be provided on submission. This will be used for the Congress scientific programme and handbook where space is limited.

#### Submission Dates

Clinical research abstracts can be submitted from **Thursday 18 January and 8 February 2024**. Submissions after this date will be rejected and will not be read.

#### Submission Process

The link for submitting your abstract will go live on 18 January 2024. To submit your abstract go to:

<http://mc.manuscriptcentral.com/evj-abstracts>

To facilitate anonymised peer review, submit 2 copies:

1. **Anonymised copy for peer review:** Remove author names and addresses and delete all identifying details and where appropriate replace these with the words “details anonymised for peer review” in the main body of the abstract. Copy and paste this version into the manuscript information box on the submission system.
2. **Copy for production:** This must include the authors’ names and addresses after the abstract title and the Ethical declarations described above at the end of the abstract. Underline the name of the person who will present at Congress.

#### Peer Review

Submitted abstracts will be peer-reviewed in an anonymised process abbreviated from that used by Equine Veterinary Journal for full manuscripts. After an initial editorial screening phase, abstracts will be reviewed by 2 individuals with expertise in the relevant topic. Both scientific quality and relevance to equine veterinary practice will be considered.

Excessively poor grammar, lack of clarity of writing and failure to make complete and appropriate ethical declarations will be grounds for abstract rejection. There will be no opportunity for revision.

### **Prior Presentations and Publications**

It is permissible to submit work that is similar or identical to abstracts that have been presented at any other conferences after 13th September 2023. Material presented PRIOR to this date will not be considered. Abstracts describing work that is currently being considered for publication in any peer reviewed journal at the time of abstract submission are not eligible.

### **Future Publication of Material in Your Abstract**

Equine Veterinary Journal encourages submission of full papers describing work that has already been submitted or presented as clinical research abstracts at BEVA Congress. Publication of a 500 word abstract in this (or any other congress proceedings) will not prevent you submitting the same work as a full manuscript to Equine Veterinary Journal (see EVJ author guidelines Section 3.1) but some other journals have more stringent restrictions. If you are considering future publication in other journals, authors are encouraged to verify guidelines with editors of specific journals and to be aware that some journals limit the length of previously published abstracts to as few as 250 words.

### **Questions?**

- Queries relating to abstracts or Congress: email [debbie@beva.org.uk](mailto:debbie@beva.org.uk)
- Queries relating to the Manuscript Central submission process: email [jane@evj.co.uk](mailto:jane@evj.co.uk)

**Examples: Clinical Research Abstracts**

[https://beva.onlinelibrary.wiley.com/doi/10.1111/evj.27\\_13855](https://beva.onlinelibrary.wiley.com/doi/10.1111/evj.27_13855)

**Increased body condition score has a detrimental effect on arterial oxygen tension and increases the risk of hypoxaemia in anaesthetised horses**

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**Background:** Impaired oxygenation during anaesthesia can be detrimental. Bodyweight and body shape influence arterial oxygen tension (PaO<sub>2</sub>) but the effect of body condition score (BCS) has not been investigated. **Objectives:** To examine the effect of BCS on respiratory indices. **Study design:** Retrospective. **Methods:** 524 anaesthetic records were reviewed. Records from healthy adult horses under isoflurane anaesthesia in dorsal recumbency, receiving controlled mechanical ventilation, with complete ventilation and arterial blood gas data and BCS assessment by one person (K.L.) were included. Data were analysed using Students t-test, Mann Whitney U test, chi squared analysis and logistic regression. **Results:** 135 records for 85 horses with BCS < 6/9 (group N) and 50 horses with BCS ≥ 6/9 (group O) were included. Overall, there was a strong negative correlation between BCS and PaO<sub>2</sub> (Spearman's  $r = 0.72$ ,  $p < 0.001$ ). Group O had significantly lower PaO<sub>2</sub> (112 (50 – 546 mmHg)) compared to group N (380 (65 – 658 mmHg),  $p < 0.001$ ) which remained when horses were categorised by bodyweight > 500kg (118 mmHg vs. 390 mmHg,  $p < 0.001$ ) and < 500 kg (160 mmHg vs. 451mmHg,  $p < 0.04$ ). Group O were more likely to be hypoxaemic (PaO<sub>2</sub> < 100mmHg) compared to group N ( $p = 0.03$ ) (OR = 34.39, 95% CI = 1.3 – 911,  $p = 0.03$ ). Physiological dead space was greater in group O (0.27 (0.10 – 0.41)) *versus* group N (0.24 (0.12 – 0.35)),  $p < 0.001$ . Multivariate analysis identified a significant association between PaO<sub>2</sub> and bodyweight ( $p = 0.01$ ), physiological dead-space ( $p = 0.005$ ) and BCS ( $p < 0.001$ ). **Main limitations:** Retrospective clinical design. **Conclusions:** BCS ≥ 6 has a detrimental effect on PaO<sub>2</sub>, physiological dead space and is a risk factor for hypoxaemia in healthy anaesthetised horses positioned in dorsal recumbency. **Ethical animal research:** Ethical approval (AVA 2020-012) was granted for this study. **Informed consent:** Not stated. **Competing interests:** None declared. **Sources of funding:** None required.

**Short title:** Body condition score and hypoxaemia.



[https://beva.onlinelibrary.wiley.com/doi/10.1111/evi.20\\_13855](https://beva.onlinelibrary.wiley.com/doi/10.1111/evi.20_13855)

### **Machine intelligence for the detection of equine heart murmurs**

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**Background:** Machine-learning algorithms combined with electronic stethoscopes have shown promise in automating the detection of murmurs and valvular heart disease in humans. However, there has been no previous work exploring the applicability of these methods to the detection of abnormal equine heart sounds. **Objectives:** To design a machine-learning algorithm to automatically detect the presence of murmurs in electronic stethoscope recordings made on the chest. **Study design:** Diagnostic method development and assessment. **Methods:** Heart sounds of 128 horses presented to Rossdales Equine Hospital were recorded using an electronic stethoscope at four standard auscultation sites. In total, 491 recordings (167 minutes) were made. The presence and grade of each murmur was assessed by an equine internal medicine specialist and an echocardiographic diagnosis was recorded. Horses with non-valvular pathology were excluded. A recurrent neural network model was trained to automatically identify the presence of a murmur in an audio recording. The algorithm was trained primarily on a large open-access database of human heart sounds, and then fine-tuned on half of the equine dataset. **Results:** Evaluated on an unseen test half of the equine dataset, the algorithm is able to detect loud murmurs (at least grade 3 of 6) with an area under the receiver operating characteristic (AUROC) of 0.86 (95% CI 0.80-0.92). The algorithm can achieve a sensitivity and specificity of 82% (95% CI 70%-90%) and 82% (95% CI 76%-87%) respectively, which are promising metrics for use as an assistive tool for general veterinarians. **Main limitations:** The number of control cases (including innocent flow murmurs) and the size of the test set was limited. **Conclusions:** Machine learning algorithms offer a promising method to increase repeatability and accessibility of auscultation and reduce reliance on echocardiography. Future data collection will focus on predicting the presence of valve disease using echocardiographic diagnosis as ground truth. **Ethical animal research:** Research ethics committee oversight not required by this congress: retrospective data collection. **Informed consent:** Not stated. **Competing interests:** None declared. **Sources of funding:** A. McDonald was supported by a doctoral training award from the Engineering and Physical Sciences Research Council (EPSRC).

**Short title:** AI-based detection of heart murmurs.



**Examples: Clinical Descriptive Abstracts**

Modified from: [https://beva.onlinelibrary.wiley.com/doi/10.1111/evj.3\\_13855](https://beva.onlinelibrary.wiley.com/doi/10.1111/evj.3_13855)

**CT findings in 21 foals with undiagnosed hindlimb lameness.**

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**Background:** Limited data are available on computed tomographic (CT) findings of the pelvis, lumbar spine and hindlimbs in lame foals. **Aim of report:** To describe the range of pathologies and their location identified with helical CT in foals with hindlimb lameness and inconclusive clinical and/or radiographic examination. **Case Population and Setting:** Twenty-one foals 0-8 months of age with hindlimb lameness examined at Rossdales Ltd between July 2009 - March 2021 in which clinical and hindlimb survey radiographic examination (including stifle) had failed to definitively identify the lameness cause and CT had been performed. **Intervention:** Helical CT examination of the lumbar spine, pelvis and hindlimbs was performed under general anaesthesia/deep sedation in lateral/dorsal recumbency. **Data Collection:** Clinical and imaging details were extracted from the medical record. In every case, CT diagnosis was based on interpretation by one of two researchers (VGP, RCM) **Clinical Observations:** Location of pathologies included: 12 affecting the pelvis, 7 affecting bones or soft tissues close to/associated with the stifle, 2 had spinal pathology and one remained undiagnosed. Of the 12 foals with pathology in the pelvic bones, 8 had imaging findings consistent with osteomyelitis or infectious physitis, 3 had pelvic fracture related to primary trauma and one foal was diagnosed with a non-ossifying fibroma. Of the 7 with stifle-related pathology, 5 had imaging findings consistent with osteomyelitis and infectious physitis. One of these had pelvic and distal femoral osteomyelitis. The non-ossifying fibroma affected the pelvis and proximal tibia. One foal presented with severe soft tissue swelling at the level of the stifle, no underlying bone injury was found; post mortem examination revealed necrotising fasciitis. Of two foals with pathology associated with the spine, one was diagnosed with infectious discospondylitis and one with a vertebral luxation. **Main limitations:** Small case numbers. **Conclusions:** Osteomyelitis and infectious physitis associated with the pelvis were the most common findings in foals with hindlimb lameness and inconclusive clinical and radiographic examination, with traumatic fractures observed less frequently. **Ethical animal research:** Research ethics committee oversight not required by this congress: retrospective data collection. **Informed consent:** Explicit informed consent for this study was not obtained but horse owners were given the option to opt out of research. **Competing interests:** None declared. **Sources of funding:** None.

**Short title:** CT findings in hindlimb lame foals

Modified from: <https://beva.onlinelibrary.wiley.com/doi/10.1111/evj.13982>

### **Survival of formalin intoxication in a 13-year-old Thoroughbred gelding**

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**Background:** Reports of enteral formalin intoxication in veterinary species are primarily limited to rodents in a research setting. Two equine case reports describe severe neurologic toxicity following intralesional formalin of an ethmoid haematoma and an ethmoid adenocarcinoma (due to diffusion of formalin through the cribriform plate) [1,2] but there are no equine reports on formalin intoxication by gastrointestinal route. Aim of report: to describe the successful medical management of formalin intoxication in an adult horse, after accidental administration via nasogastric tube. **Case Population and Setting:** A 13-year-old Thoroughbred gelding was referred following accidental administration of 10% formalin via nasogastric tube. **Data collection:** extracted from the medical record. **Clinical Observations:** The horse originally presented to the referring veterinarian for colic where 1.8 L of 10% formalin was accidentally administered instead of mineral oil, a potentially lethal dose of formaldehyde. Approximately 20-hours following formalin administration, the horse was moderately tachycardic with the occasional ectopic beat, had tacky and hyperaemic mucous membranes, delayed capillary refill time, reduced borborygmi, and pronounced digital pulses. Diagnostic investigations at admission included laboratory blood analysis, urinalysis, electrocardiogram, abdominal ultrasound, palpation per rectum and gastroscopy. Results of the initial examination and clinical pathology were consistent with what might be expected with formaldehyde toxicity: hypovolaemia, gastrointestinal disease (small intestinal thickening and hypomotility, abnormal gross appearance of gastric squamous mucosa, leukopaenia due to neutropaenia and left shift, hypoalbuminaemia (likely due to protein losing enteropathy), systemic inflammatory response syndrome (SIRS) due to mucosal injury and early indicators of laminitis. Primary formaldehyde toxicity of other body systems was ambiguous: renal involvement (mildly increased urea with marked renal glucosuria), cardiac disease (inappropriate tachycardia and supraventricular premature beats) and quiet mentation could likely be secondary to the systemic derangements (hypovolaemia, SIRS, electrolyte and acid/base derangements) and pain. Intensive care included fluid and electrolyte therapy, anti-inflammatories and analgesia, digital cryotherapy, gastro-protectants and other methods of gastrointestinal support. The horse was discharged from hospital with no long-term complications. **Main limitation:** single case. **Conclusion:** This is the first report of systemic formalin intoxication in the horse in which intensive therapy was successful.

[1]Frees KE, Gaughan EM, Lillich JD, Cox J, Gorondy D, Nietfeld JC, Kennedy GA, Cash W. Severe complication after administration of formalin for treatment of progressive ethmoidal hematoma in a horse. *Journal of the American Veterinary Medical Association* 2001;219:950-952, 939.

[2].Maischberger E, Jackson MA, Kühn K, Grest P, de Brot S, Wehrli Eser M. Ethmoid adenocarcinoma: severe neurological complications after combined laser ablation and intralesional formalin injection. *Equine Veterinary Education* 2014;26:563-567.

**Ethical animal research:** Research ethics committee oversight not required by this congress: retrospective data collection.

**Informed consent:** The horse's owner gave informed consent for this report. **Competing interests:** None declared. **Sources of funding:** None.

**Short title:** Survival of formalin intoxication