Cardiotonic Activity - Supplied Traces

Experiment 18 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Teaching mode: use approved simulation, prepared demonstration records or supplied experimental data. No live-animal dosing, surgery or challenge is prescribed in these notes.

Aim

To measure force and rate from supplied cardiac traces

Principle

Cardiac force and rate are different endpoints. A force change must be interpreted alongside rhythm, baseline and the recording conditions.

Requirements

- Instructor-provided labelled diagrams, traces or data for this activity.
- Calculator, graph paper or spreadsheet, and the activity record.

Procedure

1. Define the endpoint

Record contraction amplitude, rate and rhythm and its units or scale definition.

2. Read and compare

Measure several representative beats with the given scale; compare force and rate separately and identify irregularity.

3. Present the evidence

Create a labelled table or graph with all supplied groups and time points; preserve replicate values.

4. Assess the conclusion

State the direction/magnitude of the observed change, variation and the limitation of the model.

Observations and Record

Record item	Entry
Activity / material identifier	_____
Measurement or visible feature	_____
Comparison / calculated outcome	_____
Interpretation and limitation	_____

Worked Example

The numbers below are illustrative; enter your own observations in the record.

- Rate (beats/min) = counted beats / recorded duration in seconds × 60.
- Example: 12 beats in 10 seconds gives 72 beats/min.

Result

The recorded finding is ____; the supporting observation or calculation is ____. The main limitation is ____.

Precautions

- Use the supplied teaching material; distinguish a measured observation from an assumed value.
- Keep units, axes, labels and measurement conditions consistent.
- Record limitations and seek instructor review before applying a conclusion to a live case.

Viva Questions and Answers

1. What is the measured endpoint?

Contraction amplitude, rate and rhythm.

2. What prevents an overstatement?

Use the defined model, valid controls, variation and known confounders; do not generalise beyond the supplied evidence.

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