



Ontology of hypotension

As related to Cytokine Release Syndrome (CRS)

Hypotension is a common complication of CRS and one of the key components driving the grading of CRS severity.

DE-RISKING CYTOKINE
RELEASE SYNDROME



Digital Measures Development

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Ontology of hypotension

Hypotension

Also known as
low blood
pressure



Definition

A decrease in systemic blood pressure below accepted values

Measure

A decrease in blood pressure below a defined threshold

Concepts

Summary statistics

Blood pressure (BP)

Diastolic

Systolic

Measurement interval

Metadata

Properties

Drop in BP

Baseline

Current

Threshold

Interval between BP

Time post-treatment

Start/end

Minimum number of BP recordings

Individual-specific variables

Environmental variables

Context-of-use dependent

Measurement modality

Values (or nested properties)

Systolic and diastolic BP (mm Hg) over time (hours, minutes, seconds), time frame (hours, minutes, seconds)

mm Hg

Days, hours, minutes, seconds

Initiation timestamp/termination, minimum and maximum duration of monitoring

Number of recordings

Age, BMI, baseline health status (disease history, disease burden, etc.)

Location, indoor or outdoor, transition of indoor to outdoor (or vice versa), weather, etc.

Pre-treatment, immunotherapy type, condition or therapeutic area (if relevant), therapeutic interventions

Technology type and model, evaluation method/algorithm, sensor placement

Examples

Blood pressure (BP)

Baseline

Baseline: BP at pre-infusion time; BP levels over last two days.

Definition: Blood pressure over a specified time frame for use as a comparator to future blood pressure recordings.

Defining the parameters of baseline blood pressures will lead to a patient-centered approach to identification and treatment of hypotension.

Blood pressure (BP)

Threshold

Threshold: Threshold: <90/60 mm Hg; personalized baseline.

Definition: The point at which the measurement signals reach a critical transition.

Defining the parameters of threshold BP will lead to earlier identification of CRS progression and consistency in CRS grading.

Measurement interval

Interval between measures: Every four hours (standard of care); continuous monitoring.

Duration: 14 days (recommended observation period for CRS).

Measure considerations and assumptions:

- Establishing a personalized BP baseline is key, as the presentation of hypotension with CRS can be rapid.
- Device placement (e.g., wear location) and body position (e.g., sitting) can influence the measurement and conversion algorithms for blood pressure. Properly educating patients in the collection of blood pressure measures is essential.
- Medications taken that alter blood pressure can exacerbate CRS-induced hypotension. Blood pressure medications should be considered when developing a prediction algorithm for the onset of CRS.

More more CRS resources are available to support you.

[Full ontology of early warning signs of CRS](#)



[Ontology of fever generation](#)



[Ontology of tachycardia](#)



[Ontology of hypotension](#)



[Ontology of hypoxia](#)



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