



Dynamic profile of C-reactive protein in acute burn injury

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Background

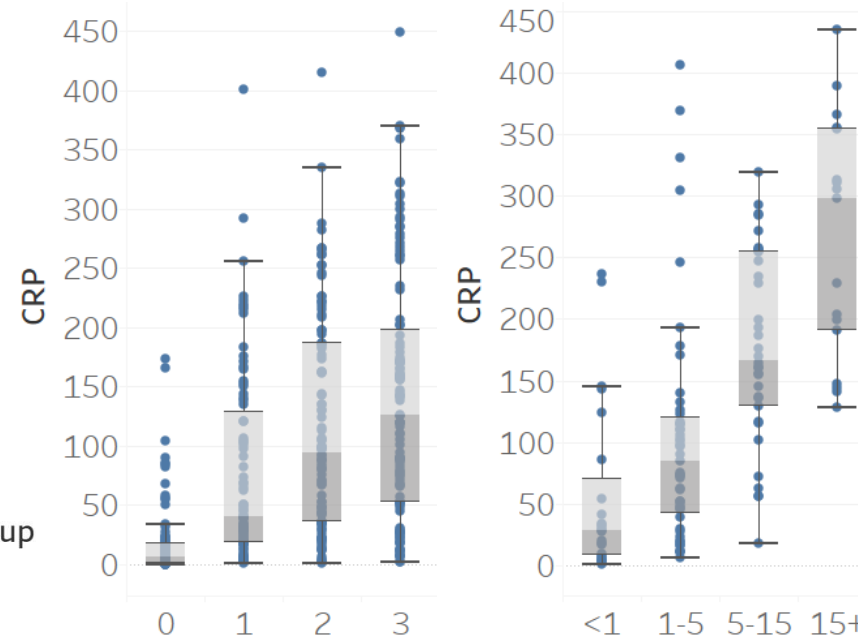
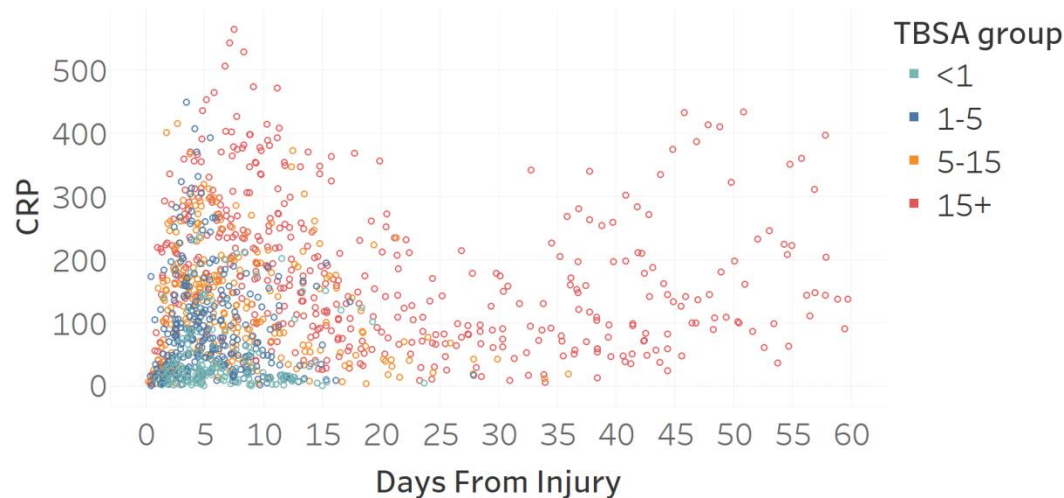
C-reactive protein (CRP) is a widely used inflammatory biomarker but its utility in burns is complicated by the systemic response to injury. The routine threshold is not appropriate for the diagnosis of infection in burns and so novel approaches to interpretation are required.

Methods

Adults admitted with acute burns within the last two years were included. Burns specific data and CRP (mg/L) within 30 days of injury were recorded. The project was approved by the local HREC.

Results

1,042 CRP results were available from 296 patients.



Median CRP increased each day after injury over days 0 to 3.

Peak CRP occurred on day 4 with a significant separation between TBSA groups (Kruskal-Wallis $p=0.0001$)

Combined antibiotic administration and CRP data within 72 hours of injury was available for only 54 patients.

Median CRP was 90 in those that received early antibiotics, 34 in those that did not. This difference was not statistically significant (Wilcoxon rank $p = 0.17$).

Conclusions

Dynamic changes in CRP in the acute phase of burn injury are dependent on time from injury and TBSA.

An adjusted threshold could be determined based on TBSA and time since injury to improve accuracy for diagnosis of infection.

A larger sample size with systematic collection is required to define the adjusted normal range and then to validate this theoretical approach.

As there are rapid changes in CRP during this period, analysis of CRP kinetics considering rate of change should also be considered.