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Distribution and differentiation of myeloid-derived suppressor cells after fluid resuscitation in mice with hemorrhagic shock

Key words: **Hemorrhagic shock, Hydroxyethyl starch, Hypertonic saline, Myeloid-derived suppressor cells, Normal saline**

Research Summary

This article mainly investigated the effects of three resuscitation fluids on the distribution and differentiation of myeloid-derived suppressor cells (MDSCs) after hemorrhagic shock.

Three resuscitation fluids:

- NS: Normal saline
- HTS: Hypertonic saline
- HES: Hydroxyethyl starch

Two major subsets of MDSC:

- M-MDSC: Monocytic MDSC
- G-MDSC: Granulocytic/Neutrophilic MDSC

Research Summary

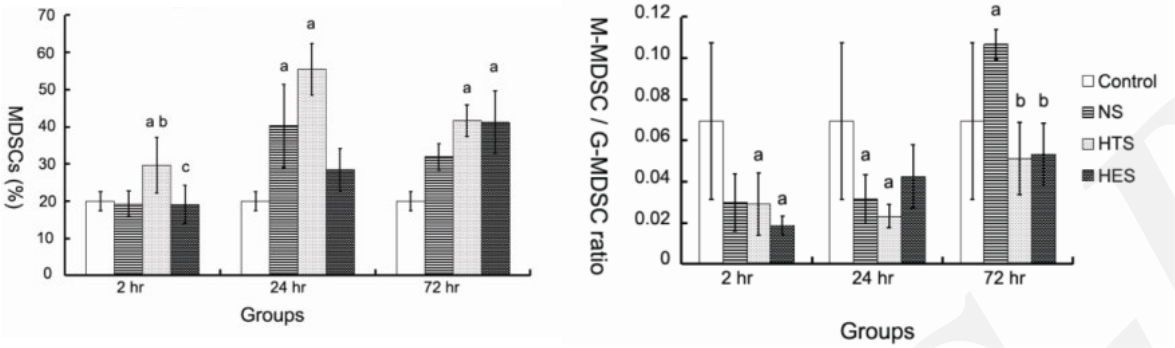

Fig. 1 Variations of MDSCs and M-MDSC/G-MDSC ratio in mice peripheral blood nucleated cells at different time points.

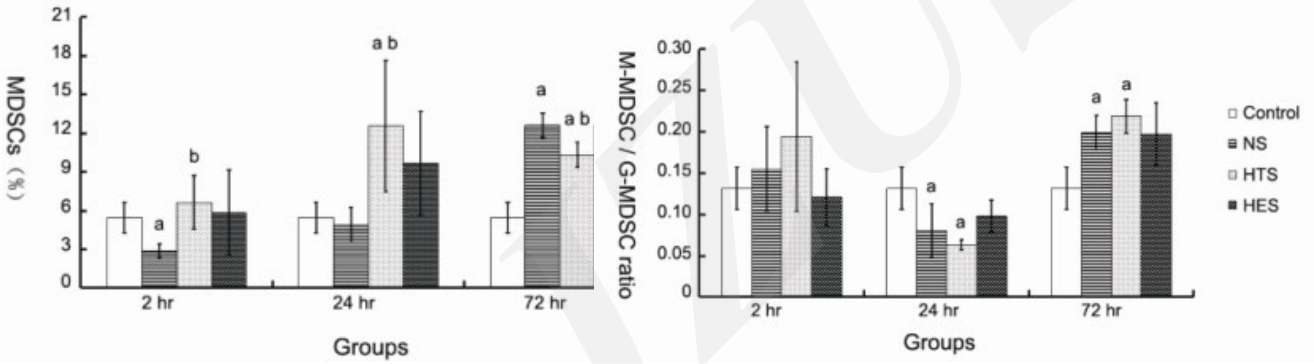

Fig. 2 Variations of MDSCs and M-MDSC/G-MDSC ratio in mice spleen at different time points.

Research Summary

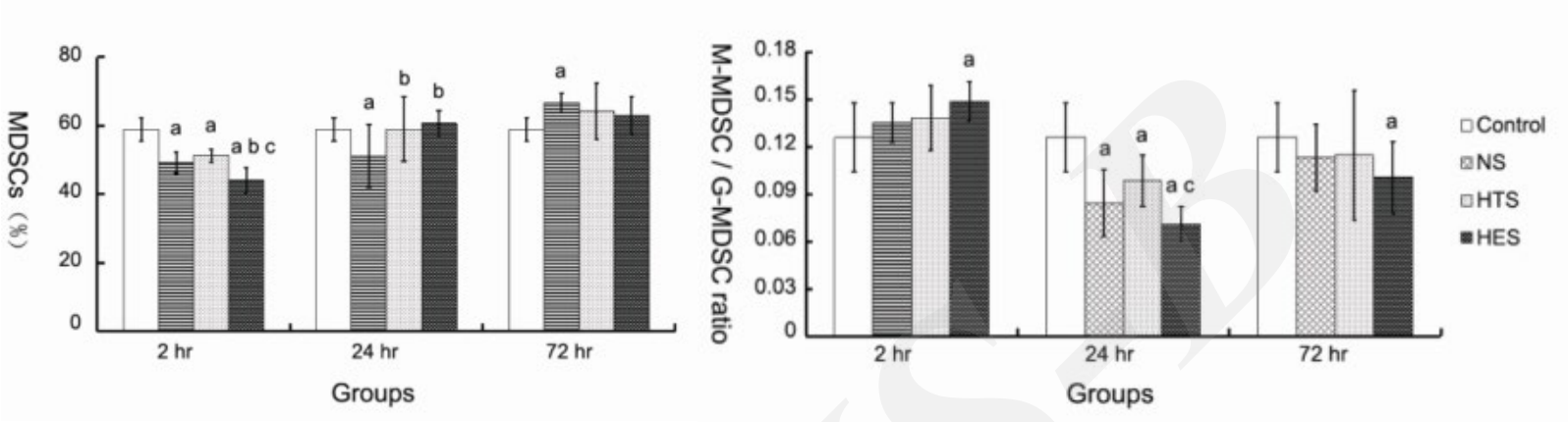

Fig. 3 Variations of MDSCs and M-MDSC/G-MDSC ratio in mice bone marrow nucleated cells at different time points.

Innovation points

- **This study shows that resuscitation with HTS could induce the earlier elevation of MDSCs in peripheral blood and spleen, and influence the distribution and differentiation regulation of MDSCs.**

- **HES may have relatively less effect on the distribution regulation but a stronger impact on the differentiation regulation of MDSCs, and induce the MDSCs inclining to G-MDSCs, especially in bone marrow.**

- **The sequential use of HTS and HES in the different resuscitation stages may be a beneficial strategy for hemorrhagic shock.**

Figure 4