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Jumonji Domain-containing 3 (Jmjd3) Promoted Inflammation by PHF20 Ubiquitination to Induce p65 in Paediatric Patients with Septicemia

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ABSTRACT Inflammation septicemia is a systemic infectious disease, which is seriously harmful to the health of the patient, caused by bacteria. This study aimed to investigate the function and possible mechanism of Jumonji domain-containing 3 (Jmjd3) in a model of paediatric patients with septicemia. The subjects included 12 paediatric patients with septicemia and 12 normal healthy volunteers at our hospital.Infant (2 weeks old) C57BL/6 mice were received with lipopolysaccharide (LPS).THP-1 cell was induced with LPS. The serum expression of Jmjd3 mRNA level in paediatric patients with septicemia was up-regulated. Jmjd3 protein and mRNA expression in lung tissue were induced in mice with septicemia. Jmjd3 promoted inflammation *in vitro model* of septicemia. Jmjd3 promoted septicemia and inflammation in the mice model. Jmjd3 induced p65 in paediatric mice with septicemia by plant homeodomain finger protein 20 (PHF20) Ubiquitination. Taken together, the findings demonstrate Jmjd3 promoted inflammation by PHF20 Ubiquitination to induce p65 in paediatric patients with septicemia. The researchers identified that Jmjd3 could hopefully become a therapeutic strategy for paediatric sepsis.