**Table S1.** Diagnostic guidelines for HLH as proposed by the Histiocyte Society (HLH-2004, adapted from Henter *et al.*<sup>1</sup>)

| The diagnosis of HLH can be established if one of either 1 or 2 below is fulfilled: |
|---|
| 1) A molecular diagnosis consistent with HLH  |
| 2) Diagnostic criteria for HLH fulfilled (five out of the eight criteria below)     |
| Fever   |
| Splenomegaly  |
| Cytopenias (affecting ≥2 of 3 lineages in the peripheral blood):                    |
| Hemoglobin <90 g/L (in infants <4 weeks: hemoglobin <100 g/L)                       |
| $Platelets < 100 x 10^9 / L$  |
| Neutrophils <1.0x10 <sup>9</sup> /L   |
| Hypertriglyceridemia and/or hypofibrinogenemia:                                     |
| Fasting triglycerides ≥3.0 mmol/L ( <i>i.e.</i> , ≥265 mg/dl)                       |
| Fibrinogen ≤1.5 g/L   |
| Hemophagocytosis in bone marrow or spleen or lymph nodes                            |
| Low or absent NK-cell activity  |
| Ferritin ≥500 μg/L  |
| Soluble CD25 (i.e., soluble IL-2 receptor) ≥2,400 U/mL                              |

Table S2. Additional laboratory testing for lactate dehydrogenase and liver/biliary functional markers

| Tested analyte (reference range)       | Number of cases of total tested  | Median (interquartile range) |
|--|----------------------------------|------------------------------|
|  | with elevated values (prevalence |                              |
|  | rate)                            |                              |
| Lactate dehydrogenase (LDH)            | 26 of 28 (93%)                   | 514 U/L (311-916 U/L)        |
| (115-221 U/L)                          |                                  |                              |
| Aspartate transferase (AST) (12-       | 20 of 30 (67%)                   | 109 U/L (31-292 U/L)         |
| 38 U/L)                                |                                  |                              |
| Alanine aminotransferase (ALT)         | 16 of 30 (53%)                   | 45 U/L (25-94 U/L)           |
| (7-41 U/L)                             |                                  |                              |
| Gamma-glutamyl transferase             | 13 of 16 (81)                    | 199 U/L (73-721 U/L)         |
| (GGT) (9-58 U/L)                       |                                  |                              |
| <b>Total bilirubin</b> (0.2-1.3 mg/dL) | 15 of 29 (52%)                   | 1.6 mg/dL (0.4-3.9 mg/dL)    |

Table S3. Detailed list of all immunosuppressive agents provided to patients in the setting of HLH

| Immunosuppressive agent     | Number of patients receiving (prevalence rate |  |
|-----------------------------|---|--|
|                             | amongst all patients)                         |  |
| Corticosteroid*             | 22 (73%)                                      |  |
| Methylprednisolone          | 14 (47%)                                      |  |
| Prednisone                  | 8 (27%)                                       |  |
| Hydrocortisone              | 8 (27%)                                       |  |
| Dexamethasone               | 2 (7%)  |  |
| Mycophenolate mofetil       | 7 (23%)                                       |  |
| Intravenous immune globulin | 6 (20%)                                       |  |
| Calcineurin inhibitor       | 5 (17%)                                       |  |
| Cyclosporine                | 3 (10%)                                       |  |
| Tacrolimus                  | 2 (7%)  |  |
| Hydroxychloroquine          | 4 (13%)                                       |  |
| Anakinra                    | 3 (10%)                                       |  |
| Cyclophosphamide            | 2 (7%)  |  |
| Etoposide                   | 2 (7%)  |  |
| Rituximab                   | 2 (7%)  |  |
| Daclizumab                  | 1 (3%)  |  |
| Antithymocyte globulin      | 1 (3%)  |  |
| Alemtuzumab                 | 1 (3%)  |  |
| Infliximab                  | 1 (3%)  |  |
| Methotrexate                | 1 (3%)  |  |

<sup>\*</sup>Nine patients received more than one corticosteroid for the management of HLH.