血液骨髓移植團隊

Blood & Marrow Transplantation

1-2 minutes video

Please provide 中文口頭稿

由國際醫療中心統一製作

臺北榮民總醫院

Taipei Veterans General Hospital

醫療項目及適應症

- 異體造血幹細胞移植/allogeneic hematopoietic stem cell transplantation
  - 急性骨髓性白血病（Acute myeloid leukemia, AML）
  - 急性淋巴性白血病（Acute lymphoid leukemia, ALL）
  - 其他血液惡性疾病（Other hematological malignancies）
  - 再生不良性貧血（Aplastic anemia, AA）
- 自體造血幹細胞移植/autologous hematopoietic stem cell transplantation
  - 多發性骨髓瘤（Multiple myeloma, MM）
  - 淋巴瘤（Lymphomas）

治療過程

- **異體造血幹細胞移植** (allogeneic hematopoietic stem cell transplantation)
  - 病患及風險評估 (Evaluation of candidates and risk factors for transplantation)
  - 捐贈者選擇 (Donor selection)、幹細胞收集 (Stem cell harvesting)
  - 中心靜脈導管置放 (Central venous catheter implantation)
  - 移植前置化療 (Conditioning chemotherapy)
  - 造血幹細胞移植 (Hematopoietic stem cell transplantation)
  - 支持性照護直至恢復 (Supportive care till recovery)

- **自體造血幹細胞移植** (autologous hematopoietic stem cell transplantation)
  - 病患及風險評估 (Evaluation of candidates and risk factors for transplantation)
  - 幹細胞動員 (Stem cell mobilization)
  - 幹細胞收集 (Stem cell harvesting)
  - 中心靜脈導管置放 (Central venous catheter implantation)
  - 移植前置化療 (Conditioning chemotherapy)
  - 急性移植物對抗宿主疾病預防 (Prophylaxis of acute graft-versus-host disease, GvHD)
  - 造血幹細胞移植 (Hematopoietic stem cell transplantation)
  - 支持性照護直至恢復 (Supportive care till recovery)

骨髓移植中心（Bone marrow transplantation unit）

新建骨髓移植中心啟用

骨髓移植中心（Bone marrow transplantation unit）

- HEPA空氣過濾系統之單人病室
- 具前室之正壓隔離病房

骨髓移植中心 (Bone marrow transplantation unit)

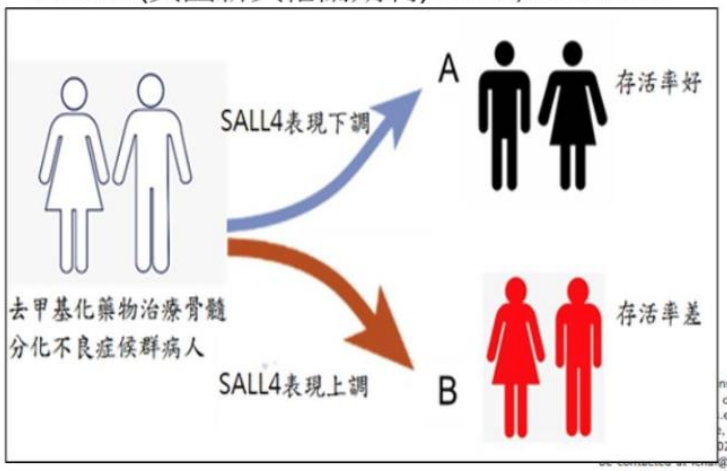
特殊事蹟

- 1984年完成國內首例異體骨髓移植
- 亞洲首例周邊造血幹細胞移植
- 除進行「全相合（matched-donor transplantation）」幹細胞移植技術外，也有困難度相對更高的親屬間「半相合（haploidentical-donor transplantation）」幹細胞移植
- 目前為止已完成超過2500例骨髓移植
- 移植成績與美國頂尖醫學中心相當

特殊事蹟

劉耀中醫師跨國研究找到關鍵『癌基因SALL4』

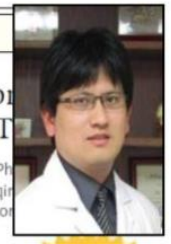
NEJM (美國新英格蘭期刊) 2022;386:1998-



ORIGINAL ARTICLE

Demethylation and Up-Regulation
of an Oncogene after Hypomethylating T

Yao-Chung Liu, M.D., Junsu Kwon, Ph.D., Emiliano Fabiani, Ph
Zhijian Xiao, M.D., Yanjing V. Liu, Ph.D., Matilde Y. Follo, Ph.D., Jinqi
Huijun Huang, M.D., Chong Gao, M.D., Jun Liu, M.D., Giulia Falco
Lia Valentini, M.S., Carmelo Gurnari, M.D., Carlo Finelli, M.D., Luci
Jin-Hwang Liu, Ph.D., Adrianna I. Jones, B.S., Junyu Yang,
Henry Yang, Ph.D., Julie A.I. Thoms, Ph.D., Ashwin Unnikrishn
John E. Pimanda, M.D., Rongqing Pan, Ph.D., Mahmoud A. Ba
Maria T. Voso, M.D., Daniel G. Tenen, M.D., and Li Chai,



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ABSTRACT

BACKGROUND
Although hypomethylating agents are currently used to treat cancer, whether they can also reactivate and up-regulate oncoge elucidated.

METHODS
We examined the effect of hypomethylating agents on *SALL4*, a known oncogene that plays an important role in myelodysplastic syndrome and other cancers. Paired bone marrow samples that were obtained from two cohorts of patients with myelodysplastic syndrome before and after treatment with a hypomethylating agent were used to explore the relationships among changes in *SALL4* expression, treatment response, and clinical outcome. Leukemic cell lines with low or undetectable *SALL4* expression were used to study the relationship between *SALL4* methylation and expression. A locus-specific demethylation technology, CRISPR–DNMT1-interacting RNA (CRISPR-DiR), was used to identify the CpG island that is critical for *SALL4* expression.

RESULTS
SALL4 up-regulation after treatment with hypomethylating agents was observed in 10 of 25 patients (40%) in cohort 1 and in 13 of 43 patients (30%) in cohort 2 and was associated with a worse outcome. Using CRISPR-DiR, we discovered that demethylation of a CpG island within the 5′ untranslated region was critical for *SALL4* expression. In cell lines and patients, we confirmed that treatment with a hypomethylating agent led to demethylation of the same CpG region and up-regulation of *SALL4* expression.

CONCLUSIONS
By combining analysis of patient samples with CRISPR-DiR technology, we found that demethylation and up-regulation of an oncogene after treatment with a hypomethylating agent can indeed occur and should be further studied. (Funded by Associazione Italiana per la Ricerca sul Cancro and others.)

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Drs. Y.-C. Liu, Kwon, Fabiani, and Xiao contributed equally to this article.

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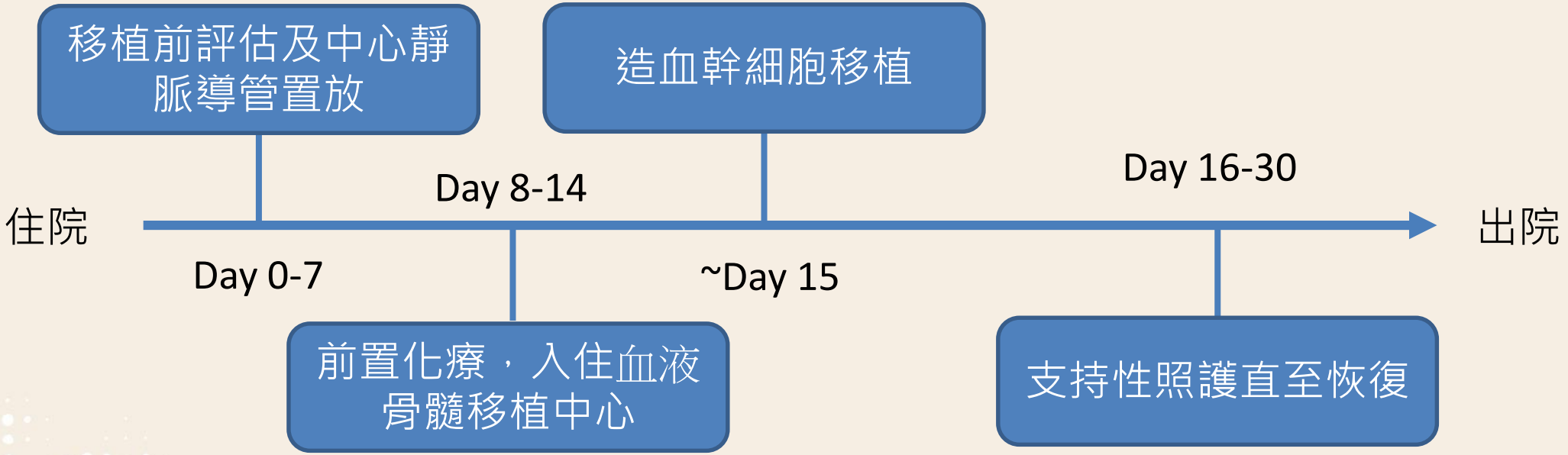
劉耀中醫師獨創研究刊登於新英格蘭醫學期刊

住院時間及醫療費用



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