Classify and Risk Analysis of Surgical patients with HIV infection

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BACKGROUND

HIV-infected patients undergoing surgeries have high postoperative risk of sepsis.
It is therefore critical to understand the risks of sepsis corresponding to various surgery-based diseases.

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CD4 count is predictive of outcome in HIV-positive patients undergoing abdominal operations

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KEY WORDS:
HIV;
acquired immunodeficiency syndrome;
immune status;
CD4;
abdominal surgery

Abstract

BACKGROUND: The impact of immune status and surgical outcome in patients with HIV and acquired immunodeficiency syndrome (AIDS) remains unknown.

METHODS: Clinical variables of HIV/AIDS patients undergoing abdominal surgery were examined for their impact on outcome.

RESULTS: Major abdominal procedures were performed in 77 patients with a diagnosis of HIV/AIDS (55 males, mean age 41.1 years, mean CD4 count 210 mg/dL). A majority of operations (53%) were performed on an urgent basis. Patients undergoing urgent procedures had lower CD4 counts (129 ± 121 vs 303 ± 324, $P = .002$). The mean CD4 count was lower for patients with complications (146 ± 156 vs 288 ± 319, $P = .013$) and for those who died (112 ± 113 vs 251 ± 283, $P = .026$). On multivariate analysis, CD4 count was independently associated with an increased risk for complication, and urgent operation was associated with an increased risk for mortality.

CONCLUSION: Patients with HIV/AIDS who had lower CD4 counts were more likely to require an urgent operation and experience a complication with increased mortality.

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Patients with HIV and acquired immunodeficiency syndrome (AIDS) have become an increasingly common source of referral for the acute care surgeon. Since the initial descriptions of HIV and AIDS-defining illnesses, many reports have validated the safety of abdominal surgery in the HIV/AIDS patient.[1–6] Presenting diagnosis, related abdominal pathology, and surgical outcomes have been well described but have been limited to single institutions with small case series.[7–10]

Immune status has been implicated as a marker of potential outcome in patients with HIV/AIDS. Both plasma HIV-1 RNA (viral load) and CD4 count have been [illegible] but results have been inconclusive.[11–15] The introduct[illegible] highly active antiretroviral therapy (HAART) in the [illegible] 1990s heralded a new era in the treatment of HIV/AID[illegible] The impact of HAART on surgical outcomes has been shown to be protective in some series[16] but without overall improvement in others.[17]

Patients with a diagnosis of HIV/AIDS who undergo abdominal surgery often present with a variety of associated infectious and malignant diseases. Opportunistic infections (OI) with cytomegalovirus, *Mycobacterium avium intracellulare*, and cryptosporidia have all been well described and are occasionally diagnosed at the time of surgery.[7,18–20] Unique malignancies, including Kaposi sarcoma and lymphoma, are often diagnosed intraoperatively or at autopsy in this patient population as well.[21–23]

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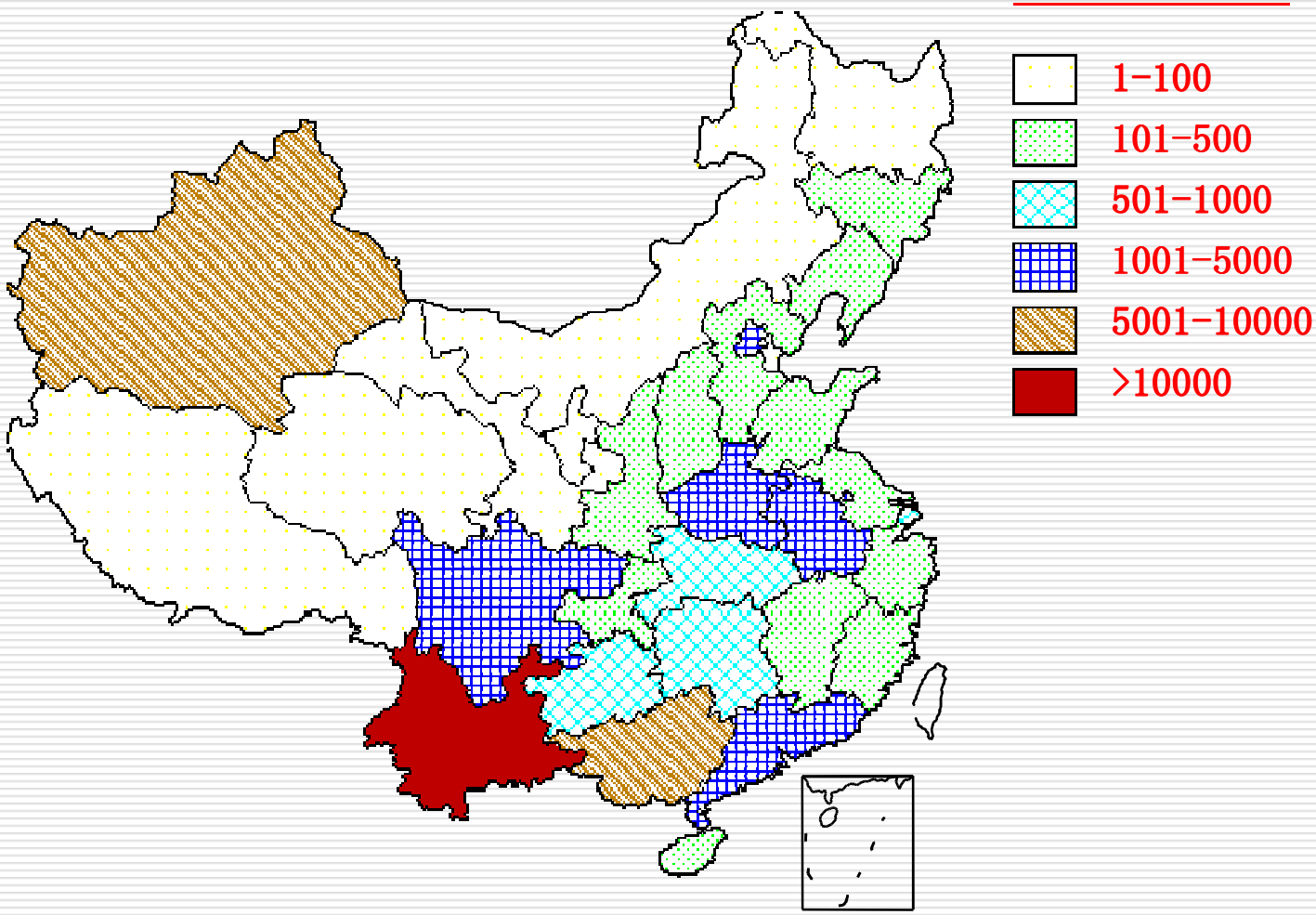
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All patients with a preoperative diagnosis of HIV positivity who underwent an abdominal operation from January 1997 to December 2007 were analyzed.

77 operation with 42cases (55%) postoperative complications, 23died(30%)

780,000 HIV infected by the end of 2011




Shanghai Publical Health Clinical Center
出口
EXIT

Object

To explore the classify and risk analysis of surgical patients with HIV-infection in China.

Methods

Retrospective analysis the clinical data of 803 HIV-infected patients who have been operated at Shanghai Public Health Clinical Center and at Henan Infectious Hospital from January 2011 to February 2014.

Methods

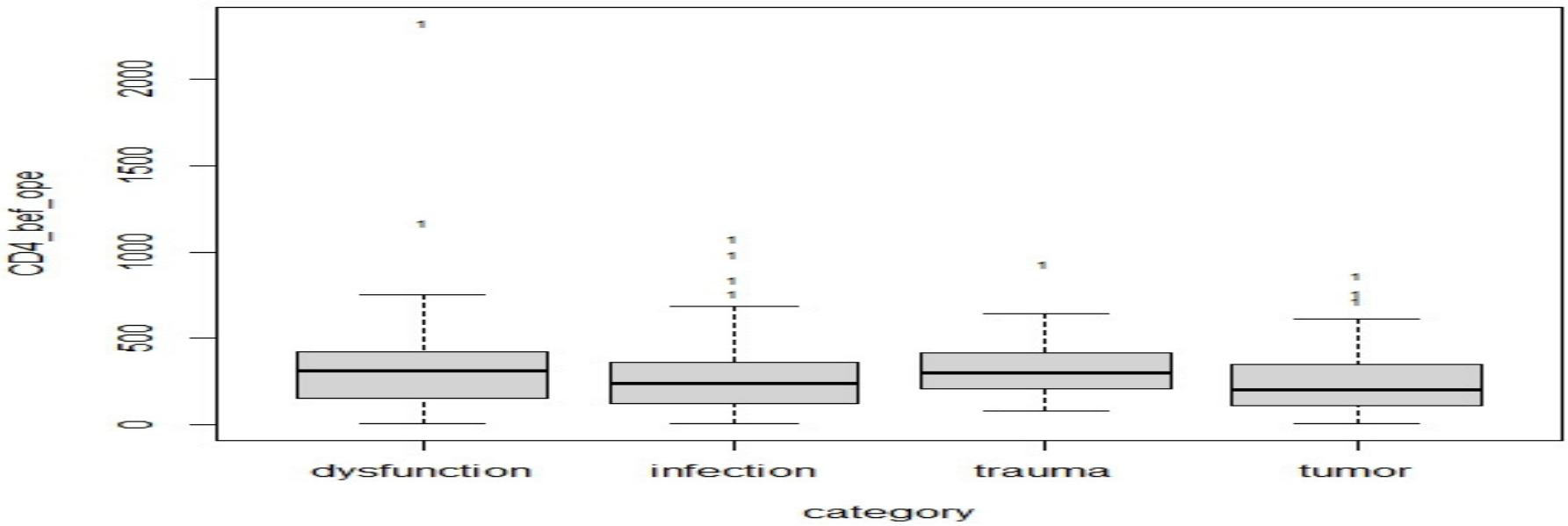
The patients were divided into sepsis and no- sepsis group. Then divided into infection, dysfunction, tumor and the trauma group respectively.
The patients CD4, CD8, CD4/CD8, WBC, Plate, Hemogloubin were compared.

Logistical regression of risk factors before operation (different operation type)

Indicators	B	S.E,	Wals	Sig.	Exp (B)	EXP(B) 's 95% C.I. Low	Up
Dysfunction			15.847	0.001			
Infection	0.546	0.331	2.715	0.099	1.726	0.902	3.306
Tumor	0.661	0.348	3.616	0.057	1.937	0.980	3.830
Trauma	2.538	0.649	15.308	0.000	12.653	3.549	45.117
WBC(×10^9/L,bef)	0.092	0.048	3.651	0.056	1.096	0.998	1.204
Hemoglobin(g/L,bef)	-0.021	0.006	13.008	0.000	0.979	0.968	0.990
Protein(g/L,bef)	-0.003	0.012	0.049	0.824	0.997	0.974	1.021
CD4(cells/μl,bef)	-0.003	0.001	5.308	0.021	0.997	0.995	1.000
CD8(cells/μl,bef)	0.000	0.000	0.605	0.437	1.000	0.999	1.000
CD4CD8Ratio(bef)	-0.214	0.625	0.117	0.732	0.807	0.237	2.746
Constant	4.655	0.959	23.551	0.000	105.095		

Results

variable	Sepsis	Non-Sepsis	Mann-Whitney U Value	P Value
CD4（cell/ul）	178.0[11.0, 608.3][a]	284.5[30.0, 628.4]	4.13	0.0001
CD8（cell/ul）	611.0[179.9, 1530.0]	674.0[243.5, 1754.2]	1.52	0.13
CD4/CD8	0.27[0.04, 0.92]	0.39[.97]	3.7	0.0001
WBC(x10^9/L)	5.0[2.3, 11.0]	5.0[2.6, 10.0]	0.22	0.82
Hb（g/L）	123.0[72.6, 156.6]	131.0[77.7, 157.0]	2.98	0.003
Plat(x10^9/L)	183[60.4,428.8]	178.0[89.3, 336.0]	0.89	0.37



Results

17 cases died within 30 day after operation (mortality 2.11%) . The patent's CD4, CD8, CD4/CD8, Plate, Hemoglobin was significantly lower in sepsis group compare with in no sepsis group.

Trauma group

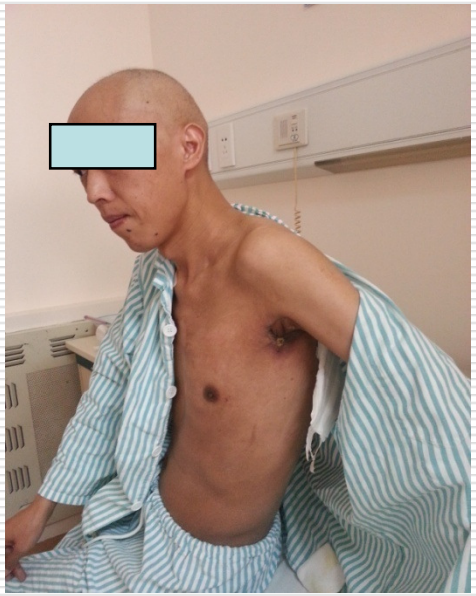
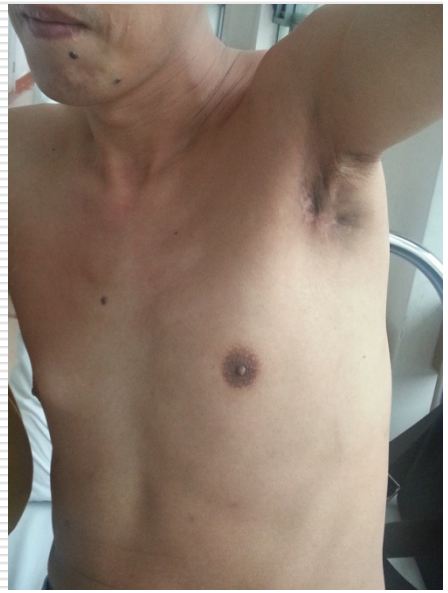


variable	Sepsis	Non-Sepsis	Mann-Whitney U Value	P Value
CD4（cell/ul）	333.0[77.0, 931.0][a]	298.0[135.0, 643.0]	0.25	0.8
CD8（cell/ul）	728.0[294.0, 1574.0]	421.0[276.0, 584.0]	2.62	0.09
CD4/CD8	0.43[0.13, 1.89]	0.86[0.32, 1.36]	1.98	0.47
WBC(x10^9/L)	6.3[3.3, 12.1]	6.5[3.4, 15.8]	0.31	0.76
Hb（g/L）	116.5[88.0, 138.0]	121.3[78.3, 141.0]	0.15	0.88
Plat(x10^9/L)	175.5[58.0, 446.0]	201.0[103.0, 251.0]	0.37	0.71

Trauma group 57 cases(7%), 24 developed sepsis, morbidity 38%, no died.

Tumor group



variable	Sepsis	Non-Sepsis	Mann-Whitney U Value	P Value
CD4（cell/ul）	151.5[5.5, 564.7][a]	219.0[10.3, 674.4]	1.87	0.05
CD8（cell/ul）	562.0[95.6, 2209.2]	607.5[143.0, 1920.8]	0.36	0.72
CD4/CD8	0.27[0.01, 2.20]	0.32[0.03, 0.95]	1.69	0.09
WBC（x 10^9/L）	4.7[3.1, 7.9]	5.3[3.1, 10.9]	1.33	0.18
Hb（g/L）	124.0[71.8, 149.7]	128.0[67.0, 154.5]	0.72	0.47
Plat（x 10^9/L）	174.5[58.8, 348.0]	171.0[91.0, 363.5]	0.16	0.87

Tumor group 225 cases(28%), 103 developed sepsis. morbidity 46%, 9 died of severe sepsis.

Infection group





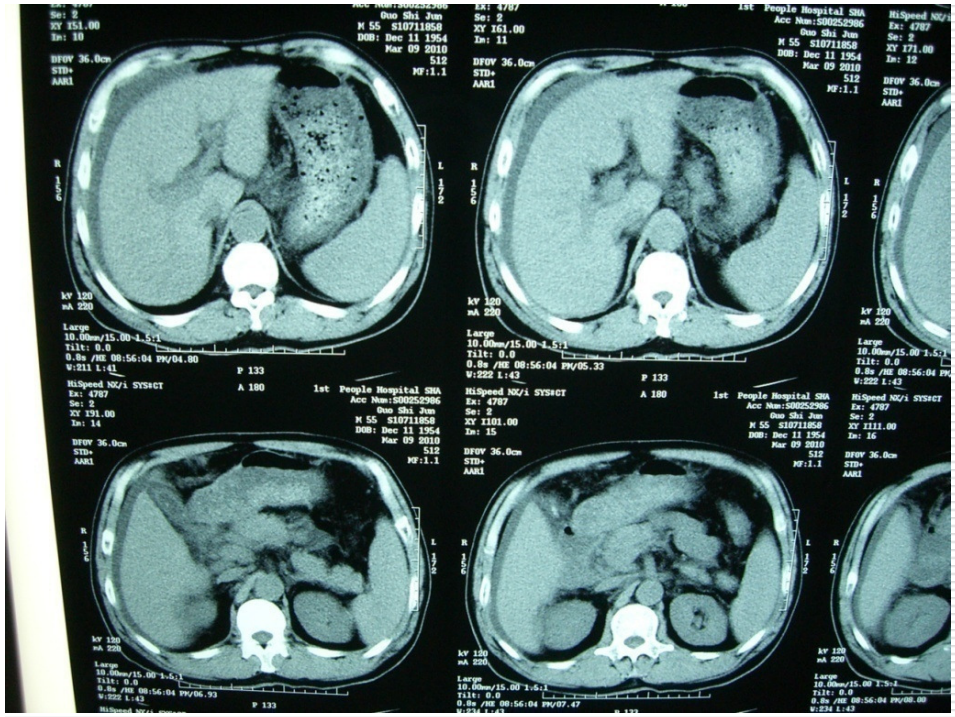




variable	Sepsis	Non-Sepsis	Mann-Whitney U Value	P Value
CD4（cell/ul）	159.0[7.6, 712.3][a]	276.0[21.8, 569.5]	3.07	0.002
CD8（cell/ul）	611.0[165.5, 1661.0]	709.0[248.8, 1911.8]	1.32	0.19
CD4/CD8	0.22[0.04, 0.99]	0.43[0.13, 1.89]	2.13	0.33
WBC（$x10^9$/L）	5.4[2.8, 11.8]	6.3[3.3, 12.1]	1.78	0.76
Hb（g/L）	122.0[62.4, 154.1]	116.5[88.0,138.0]	3.67	0.0001
Plat（$x10^9$/L）	211.0[64.4,476.1]	183.0[105.6, 336.0	2.25	0.024

Infecton group 345 cases(43%), 145 developed sepsis, morbidity 42%, 8 cases died of abdomen absis and severe sepsis.

Disfunction group





variable	Sepsis	Non-Sepsis	Mann-Whitney U Value	P Value
CD4 (cell/ul)	179.0[9.6, 660.4][a]	343.0[102.2, 720.0]	2.42	0.015
CD8 (cell/ul)	546.0[223.4, 1759.9]	783.0[247.5, 1666.0]	1.56	0.12
CD4/CD8	0.27[0.03, 1.20]	0.44[.95]	2.66	0.008
WBC($x10^9$/L)	4.7[1.8, 13.9]	4.9[2.1, 10.2]	0.29	0.78
Hb (g/L)	134.0[68.1, 168.8]	127.0[61.0, 171.0]	0.76	0.45
Plat($x10^9$/L)	160[40.3,423.5]	164.0[56.0, 352.0]	0.17	0.87

Disfunction group 176 cases(22%)。46 developed sepsis(mortality 25.4%), no died.

Treating AIDS patients with decompensated liver cirrhosis by autologous bone marrow transfusion

Treating AIDS patients by autologous bone marrow transfusion





AIDS with TB intestinal abstruction，CD4 only 1 cell/ul.Part intestin resection and ileum fistul.6 months after operation,CD4 incresed to 20 cell/ul.One month after second operation of enclosed ileum fistul and autologous bone marrow transfusion,CD4 increased to 54 cell/ul.2 months CD4 increased to 70 cell/ul.

6 month after second operation of enclosed ileum fistul and autologous bone marrow transfusion,CD4 increased to 168 cell/ul.There is no virus load.

This advanced AIDS patient is clinical cured.



OPEN

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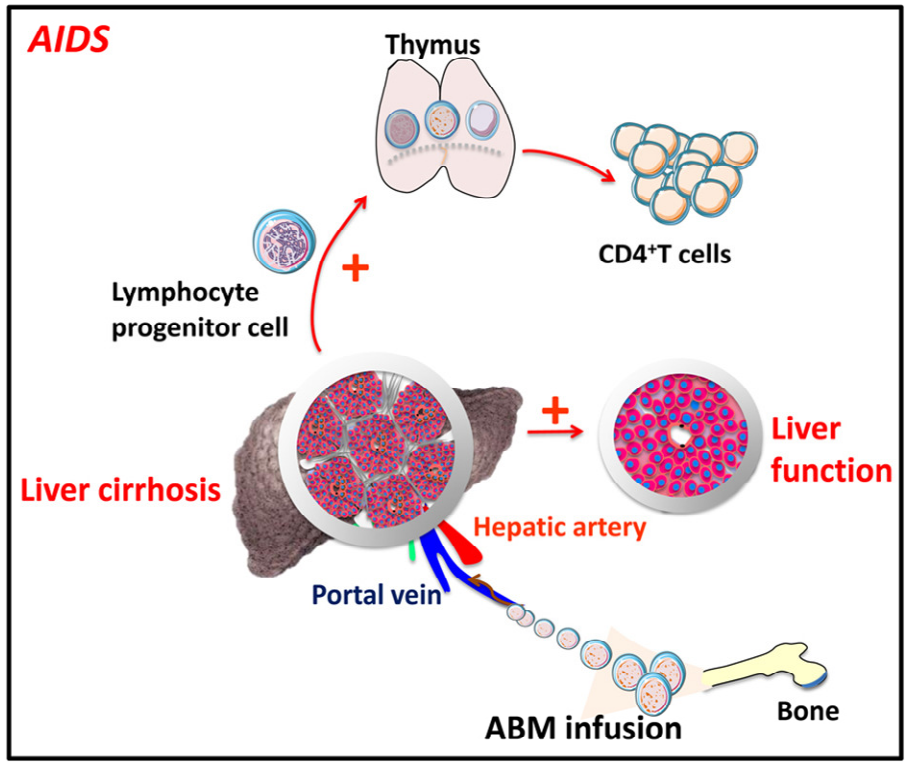
News and Commentary

Bringing back the help: autologous bone marrow infusion restores CD4$^+$ T cells in AIDS patients with chronic liver disease

AB Rabson[*,1]

Cell Death and Disease (2013) **4,** e849; doi:10.1038/cddis.2013.373; published online 10 October 2013

In this issue of Cell Death and Disease, Liu et al. report the striking observation that portal vein infusion of autologous bone marrow in four AIDS patients with severe liver cirrhosis resulted not only in significant clinical improvement of liver function, but also a sustained enhancement of $CD4^+$ T cell levels [1]. These results raise the important possibility that autologous reconstitution in AIDS patients. This provocative study, although performed on only a small set of patients, raises a large number of fascinating questions, both mechanistic and therapeutic. We bone marrow cells also need to be addressed. This study by Liu et al. clearly offers a novel window into the critical goal of true reconstitution of immune response in patients with AIDS, and as such is provocative and noteworthy.



A. Rabson, Cell Death&Disease, 2013

Conclusion

1.The lower CD4,CD8,CD4/CD8,WBC,Plate and Hemoglobin are risk facts of postoperative sepsis.

2.Prevention of occupational expose and treatment after occupational expose is very important

3.HIV-infected patients are more likely to get postoperative infectious complications

Rational treatment can reduce the rate of postoperative infection.


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Thanks