Faculty Disclosure

	No, nothing to disclose
√	Yes, please specify:

Company Name	*Honoraria/ Expenses*	*Consulting/ Advisory Board*	*Funded Research*	*Royalties/ Patent*	*Stock Options*	*Ownership/ Equity Position*	*Employee*	*Other (please specify)*
sanofi-aventis							2011-2014	

2018
28-30 JUNE
VIENNA, AUSTRIA

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VALIDATION OF CLINICAL INDEX OF STABLE FEBRILE NEUTROPENIA (CISNE) MODEL. CAN IT GUIDE EMERGENCY PHYSICIANS TO A REASONABLE DECISION ON OUTPATIENT Vs. HOSPITALIZATION?

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MASCC/ISOO
ANNUAL MEETING ON SUPPORTIVE CARE IN CANCER

MASCC Multinational Association of Supportive Care in Cancer
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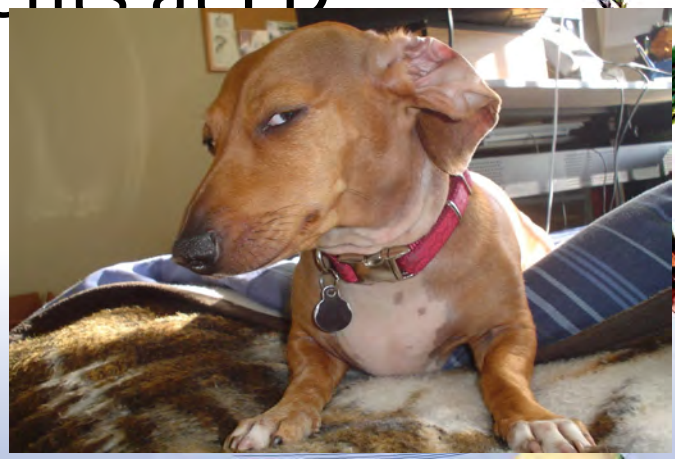
Febrile neutropenia(FN)

- One of the most common complications
- Occasionally deadly but sizable portion is…
  - relatively mild
  - particularly solid tumor
  - outpatient management with oral antibiotics
- How to single out the ***right*** patients at ED
  - MASCC RIS, Talcott's rule and *etc*.
  - Are we really satisfied?



CISNE Model

- Proposed in 2011
- Initial assessment
  - "clinically unstable patients"(cUP)
  - "apparently stable patients"(aSP)
- To further triage aSP
  - CISNE I: 0 point
  - CISNE II: 1-2 points
  - CISNE III: ≥ 3 points

Table 1. CISNE Score

Characteristic	Points
ECOG PS ≥ 2	2
SIH	2
COPD	1
Chronic cardiovascular disease	1
Mucositis NCI grade ≥ 2	1
Monocytes < 200 per μL	1

Abbreviations: CISNE, Clinical Index of Stable Febrile Neutropenia; COPD, chronic obstructive pulmonary disease; ECOG PS, Eastern Cooperative Oncology Group performance status; NCI, National Cancer Institute; SIH, stress-induced hyperglycemia.

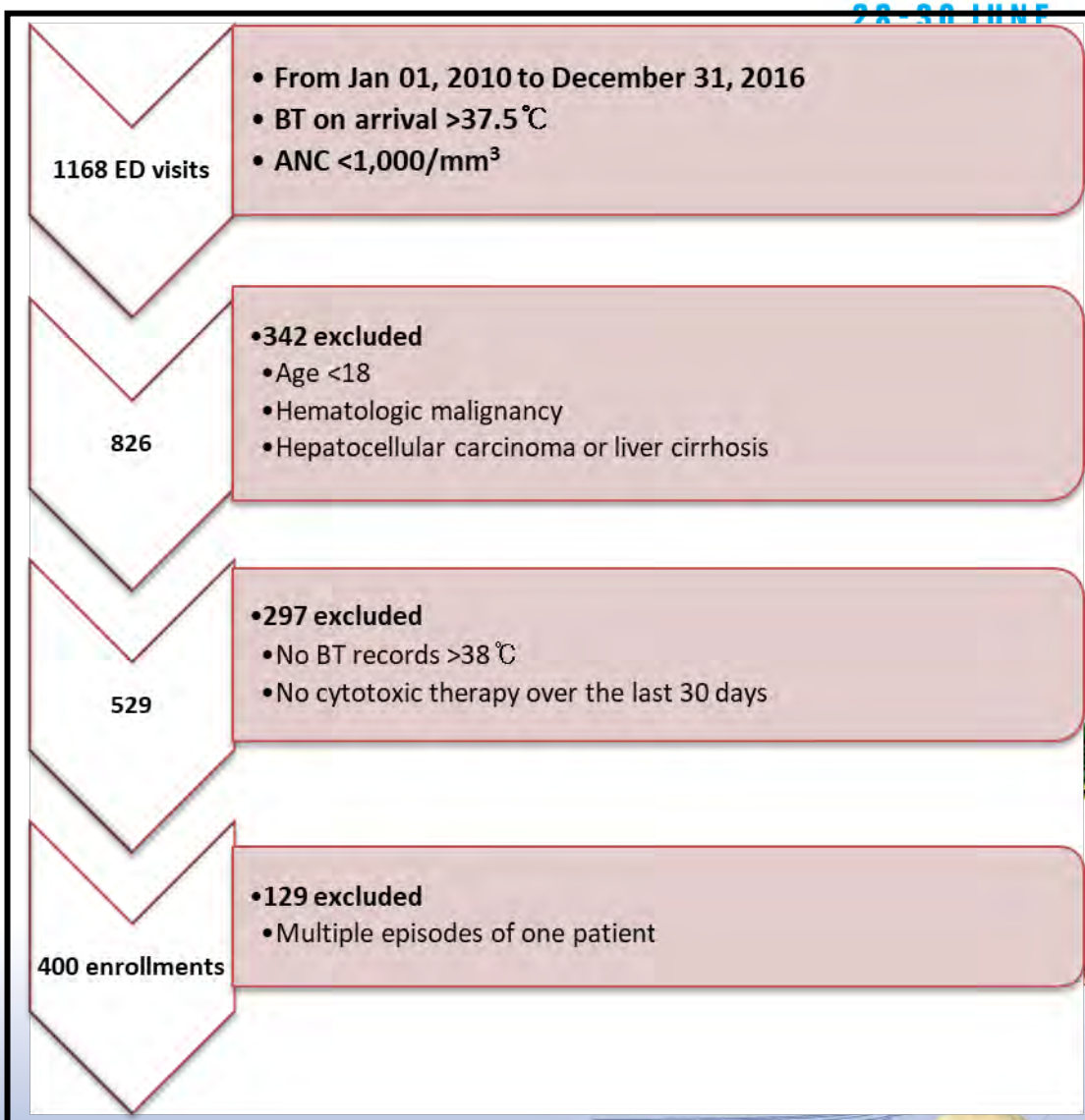
Carmona-Bayonas, A et al. J Clin Oncol 33(5): 465-471.

Aims

- To validate CISNE model for Korean FN patients presenting to ED of a comprehensive cancer hospital
- To explore the best strategy to guide emergency physicians to an evidence-based decision on outpatient *vs.* inpatient

Study scheme

- Retrospective
- Single center
- Adult solid tumor
- Fever presenting to ED
- cytotoxic chemo < 30D
- 400 enrollments
- Primary outcome
  - 'any serious complications' (ASC)
  - a bit broader than proposed



Results: Stable vs. Unstable

	Total (N=400)	Stable (N=299)	Unstable (N=101)
Age(IQR)	56 (46-65)	52 (44-61)	64 (56-70)
Female (%)	257 (64)	223 (74.6)	34 (33.7)
Primary cancer			
Breast (%)	148 (37)	134 (44.8)	14
Gynecologic	58	50	8
Lung	86	37	49(48.5)
Sarcoma	34	26	8
Head & neck	20	11	9
Stomach	16	12	4
Urologic	16	12	4
Colorectal	9	7	2
Pancreatobiliary	3	2	1
Others	9	7	2
Treatment intent			
Palliative	172	97	75 (74.3)
Non-palliative*	228(57)	202(67.6)	26
Bacteremia (%)	47 (11.8)	24 (8.0)	23 (22.8)
Duration of illness, days	5 (3-10)	4 (3-7)	10 (6-17)
MASCC Low risk (%)	338 (84.5)	275 (92.0)	63 (62.4)
Death (%)	21 (5.3)	0 (0)	21 (20.8)

* *neoadjuvant, adjuvant or CCRT*

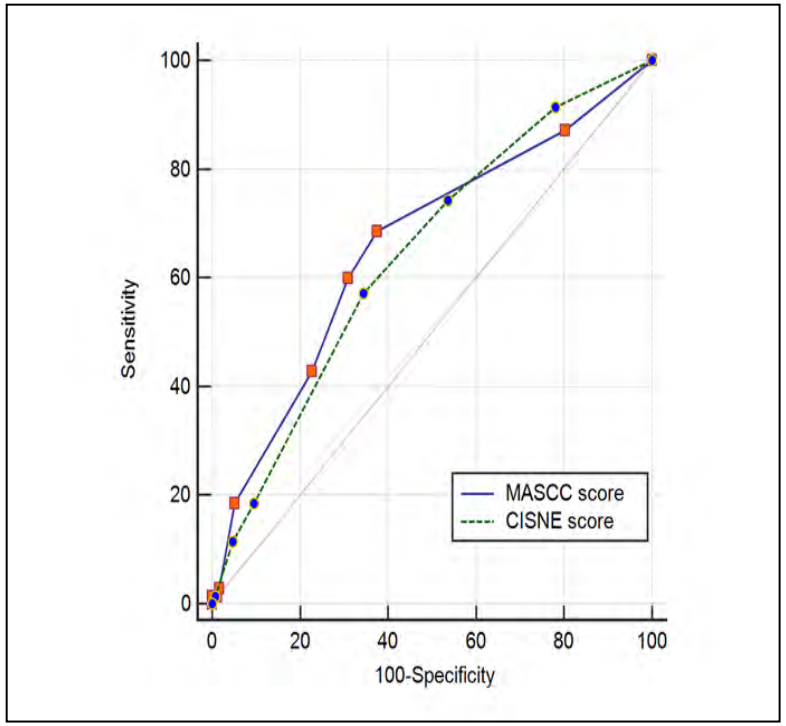
Key results: more Cx as CISNE up

CISNE	I	II	III	p
Numbers(%)	56(18.7)	124(41.5)	119(39.8)	
Age (IQR)	49.5 (42-57.3)	49 (40-58)	58 (49-65.5)	
Female (%)	51 (91.1)	96 (77.4)	76 (63.9)	
Comorbidities	5 (8.9)	10 (8.1)	12 (10.1)	
Monocyte count	453 (337-635)	140 (50-312)	40 (16-110)	<.01
Hypotension	6 (10.7)	15 (12.1)	21 (17.6)	0.16
Other ASC	0	14(11.3)	37(31.1)	
Any serious Cx*	6 (10.7)	24 (19.4)	40 (33.6)	<.01
Bacteremia	4 (7.1)	8 (6.5)	12 (10.1)	0.56
ASC or bacteremia	9(16.1)	31(25.0)	46(38.7)	<.01
MASCC score <21	3 (5.4)	5 (4.0)	16 (13.4)	0.02

*primary outcome

Analysis: CISNE vs. MASCC RIS

ROC analysis



- **Area Under Curve: 0.64 vs. 0.66**
- ***Δ*AUC=0.02(95% CI; -0.08-0.11)**

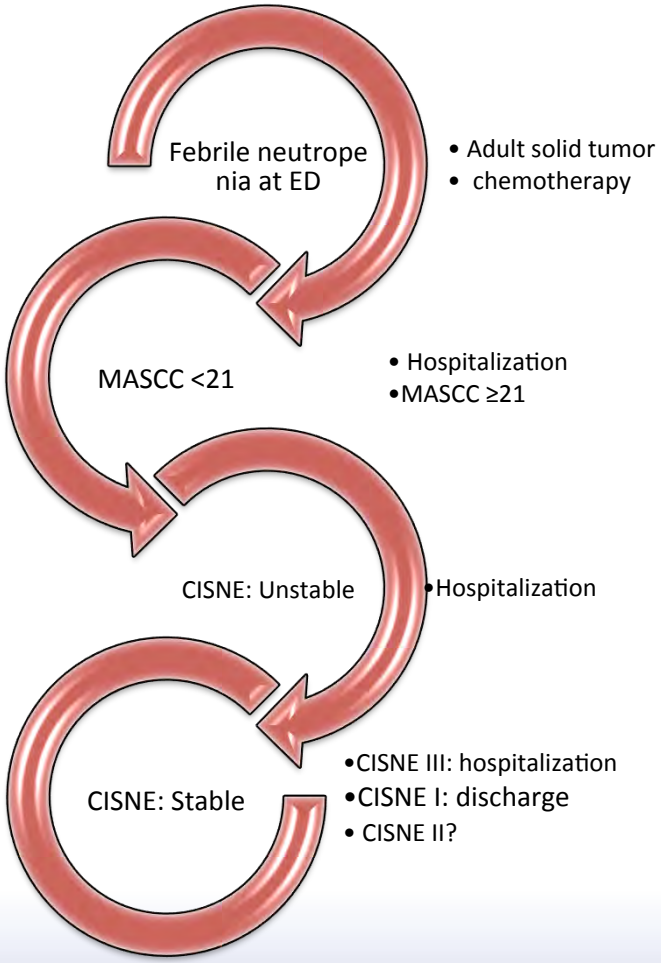
Sensitivity and specificity

Complications	CISNE I	MASCC ≥21	True positive True Negative
Zero **Any**	50 6	217 58	229 70
Sensitivity (95% CI)	0.22 (0.17-0.28)	0.95 (0.91-0.97)	
Specificity (95% CI)	0.91 (0.82-0.97)	0.17 (0.09-0.28)	

Conclusion

- MASCC RIS and CISNE
  - likely to be a winning combination at ED
  - to select low risk FN that can be managed in an outpatient setting
- MASCC RIS: quick screening
  - No elements need lab. findings
  - high sensitivity/low specificity: Yon can trust "No"
- CISNE: good confirming tool
  - high specificity/low sensitivity
  - You can trust "Yes"

Take-away message: decision chain



back up

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Limitations

- Single center, retrospective
- No lymphoma, no HCC
- How to interpret CISNE II?
- *Zero complication* is just a sufficient condition for outpatient management
- Seeking zero complication may enhance patient safety but drive up healthcare costs.

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