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FORWARD II PROGRAM UPDATE

NASDAQ: IMGN

June 2, 2018

EXECUTING ON OUR HIGHEST STRATEGIC PRIORITY: MIRVETUXIMAB SORAVTANSINE

FORWARD I

- Patient enrollment completed ahead of schedule
- Trial continuing as planned following successful pre-specified interim futility analysis
- Top-line data on-track to be reported in IH19

FORWARD II

- Updated data from the Keytruda® (pembrolizumab) cohort at SGO Annual Meeting
- Data from Avastin® (bevacizumab) expansion cohort in over 50 patients at ASCO 2018
- Updated data from carboplatin escalation cohort
- Initiated triplet cohort in January

CLINICAL COLLABORATIONS

- Co-sponsoring mirvetuximab + Rubraca® combination study in ovarian cancer with Clovis
- Multiple studies underway underway with NCCN in FRα-positive tumor types

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Rubraca® is a registered trademark of Clovis

COMPREHENSIVE DEVELOPMENT STRATEGY FOR MIRVETUXIMAB

FORWARD I

- Establish initial position through single-agent monotherapy in ovarian cancer

FORWARD II

- Expand benefit through combinations in earlier lines of ovarian cancer

NCCN National Comprehensive Cancer Network®

CLOVIS ONCOLOGY

- Broaden use into additional FRα-positive solid tumors (NSCLC, endometrial and triple-negative breast cancer)

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Ovarian Cancer

Amit M. Oza
Daniel Bergsagel Chair and Professor of Medicine,
Princess Margaret Cancer Centre,
University Health Network
University of Toronto

Unique challenges – unique opportunities?

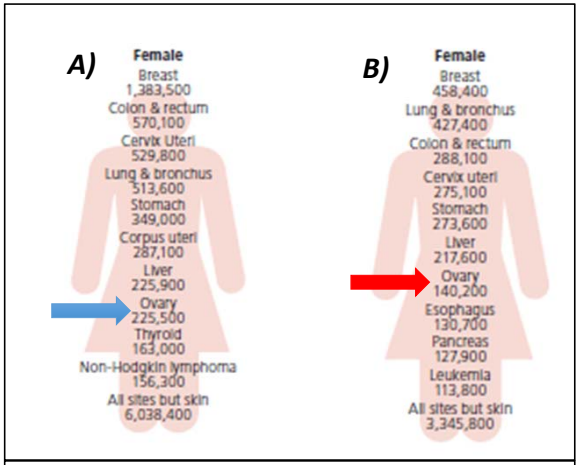
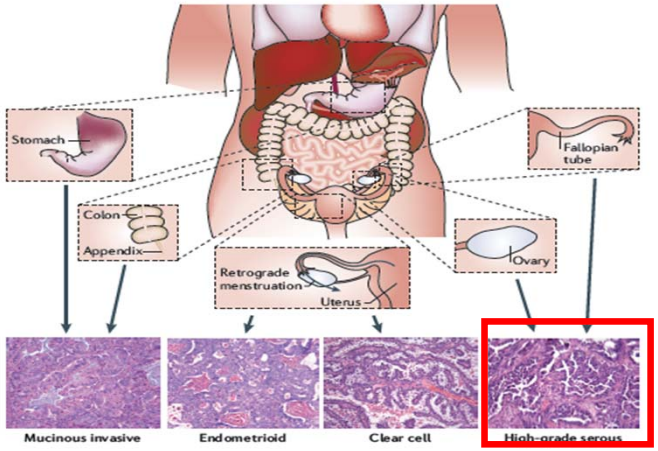
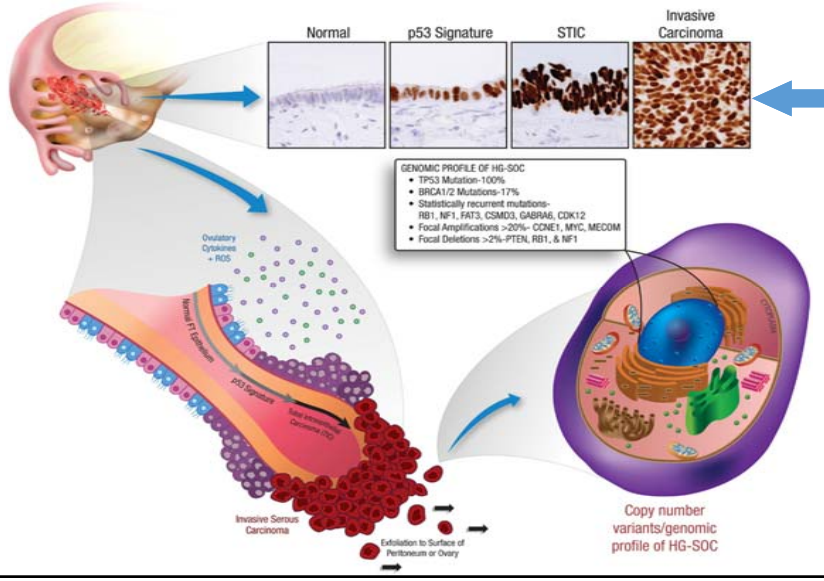


Figure 1. Worldwide estimates of new cancer cases (A) and deaths (B) by level of economic development, 2008 (*Globocan, 2008*)

- Most lethal gynecologic malignancy
  - ***Asymptomatic*** in early stages;
  - ***Widespread*** disease at diagnosis; typically diagnosed at advanced stage (IIIC-IV)
- No effective screening or prevention strategies
- BRCA - susceptibility and therapy



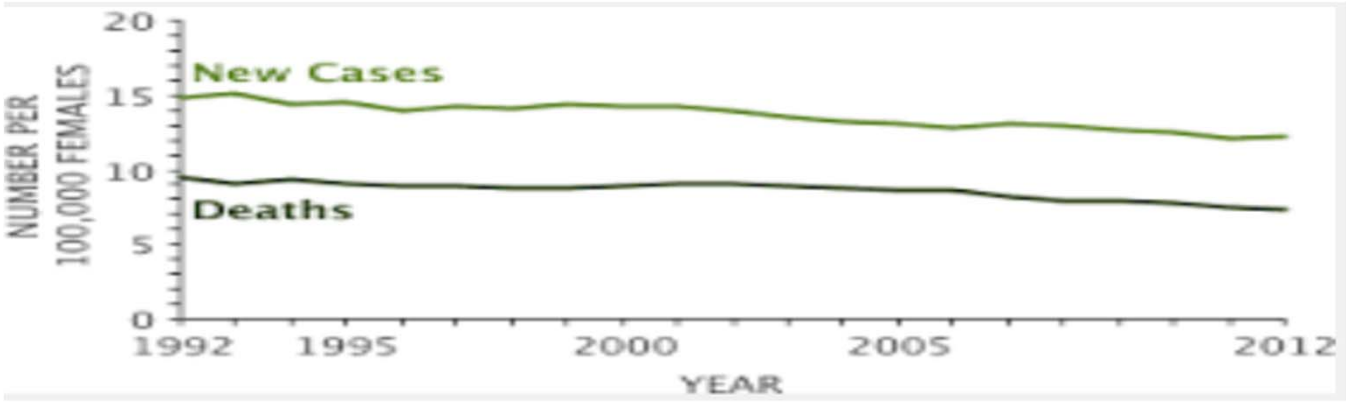


BRCA selection for preventive strategy

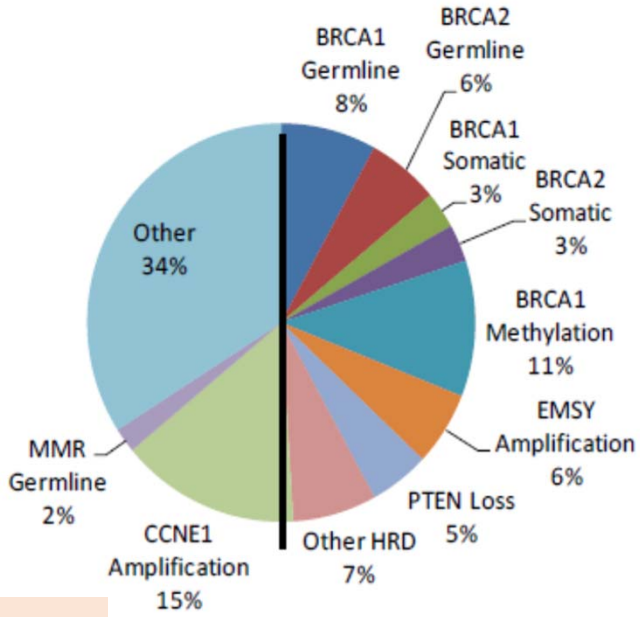
Prophylactic BSO

“Ovarian” Cancer

Incidence and Mortality



The Problem with High Grade Serous Ovarian Cancer



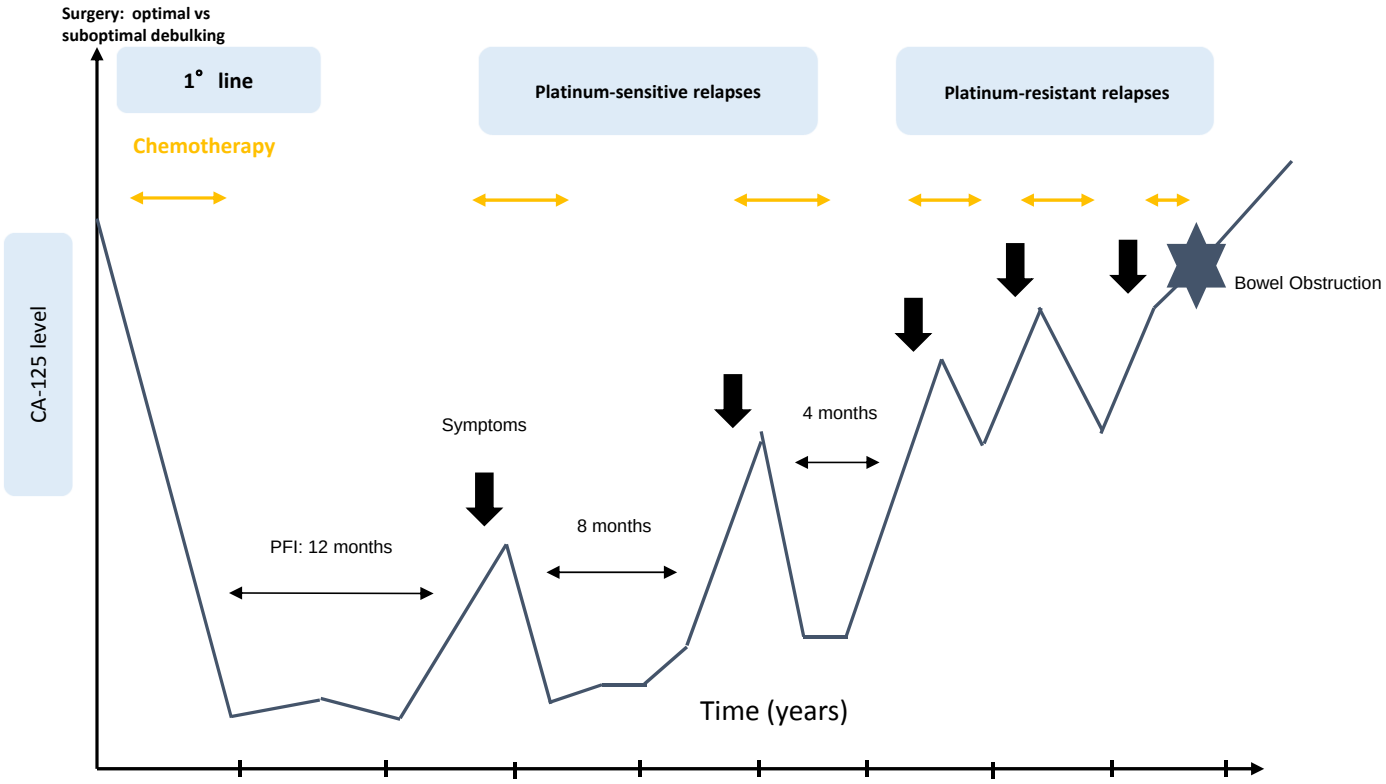
- Early Metastatic Disease
- Metastatic Spread to Distinct Niches with Differential Chemosensitivity Profiles
- Emergence of Clonal Heterogeneity
- Immune Evasion
- Paucity of “driver” mutations- dominant acting that can targeted therapeutically
- Early Emergence of Resistance to Current Therapeutic Approaches
- HGSOC is a lethal disease with a unmet therapeutic need

Hypothesis: ≈50% pts may derive benefit from PARPi

The Cancer Genome Atlas, Molecular profiling of serous ovarian cancer, D. Levine 2011

Rottapel

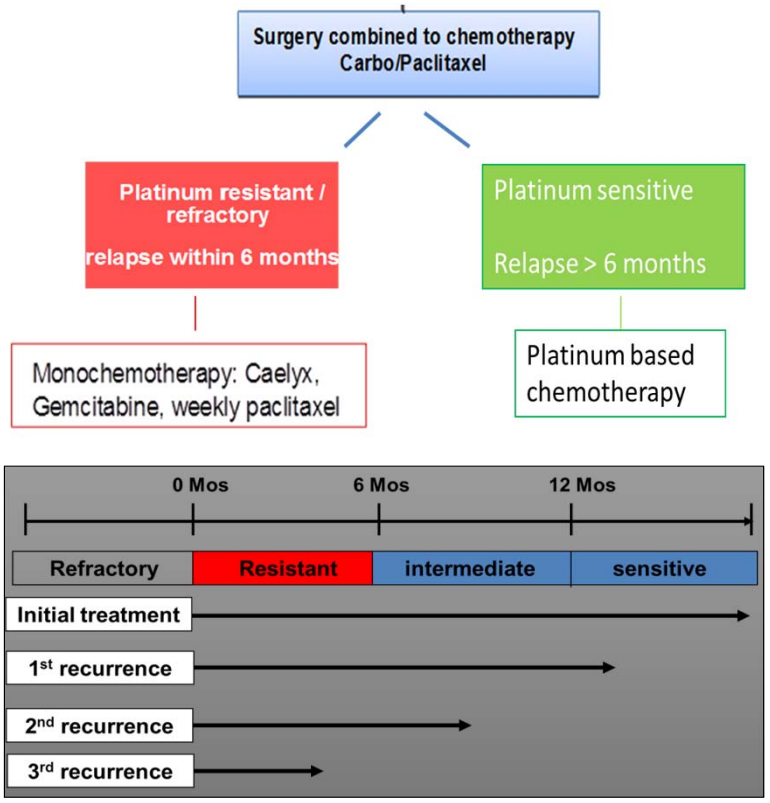
Recurrent ovarian cancer: a "incurable" disease characterized by multiple relapses



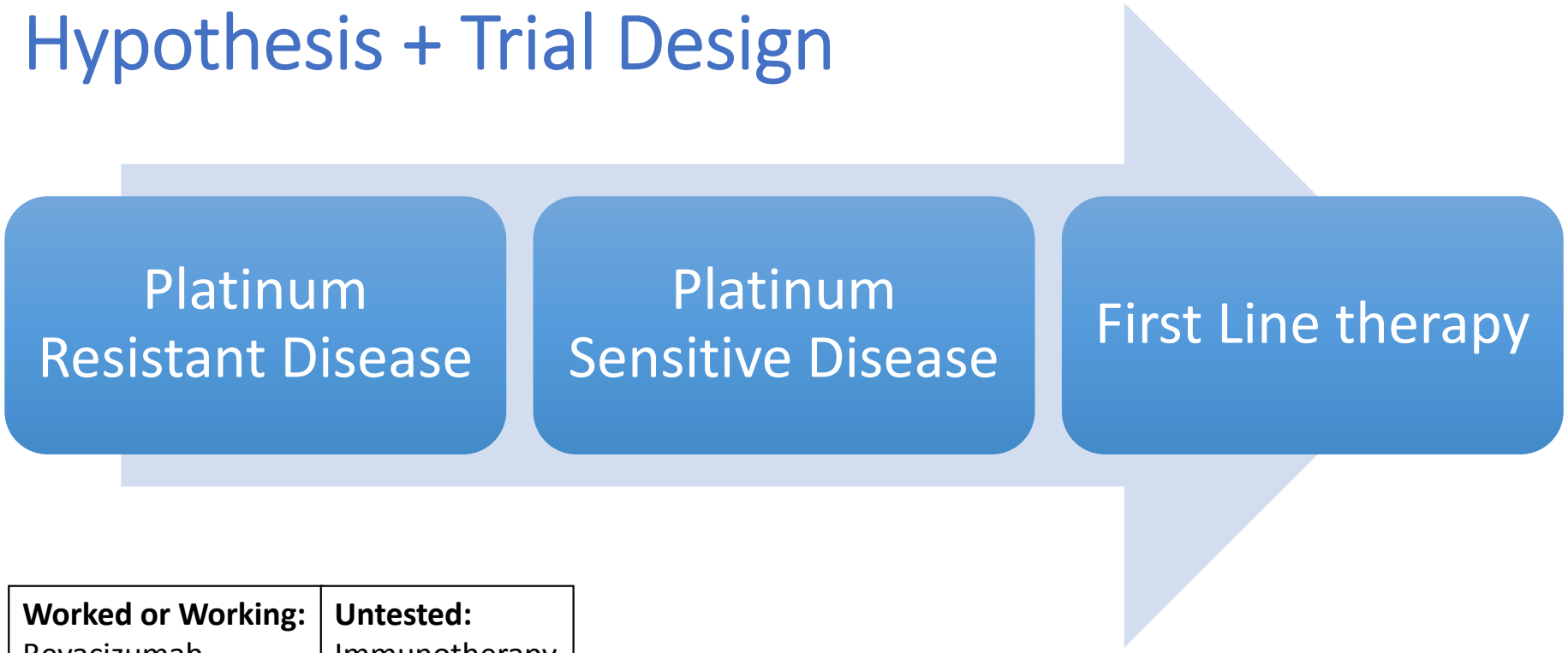
PFI, platinum-free interval

Clinical Management

- Surgery + Chemotherapy (carbo/paclitaxel)
  - 75% will relapse
  - Prognostic factors influence survival
- Clinical Recurrence
  - Abdominal pain & distension
  - Bowel change
  - Early satiety
  - Fatigue
  - Bowel Obstruction
- ***Median survival*** following relapse of 9-18 months

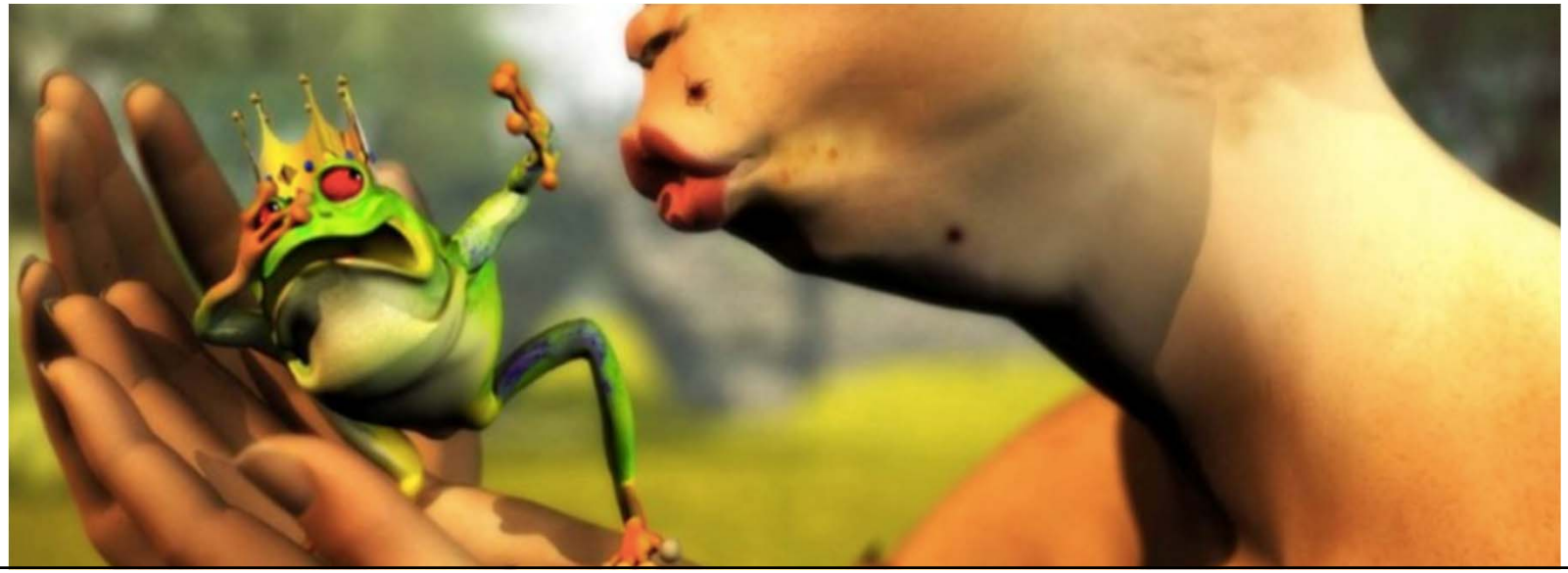


Ovarian Trials Algorithm over past 3 decades
Hypothesis + Trial Design

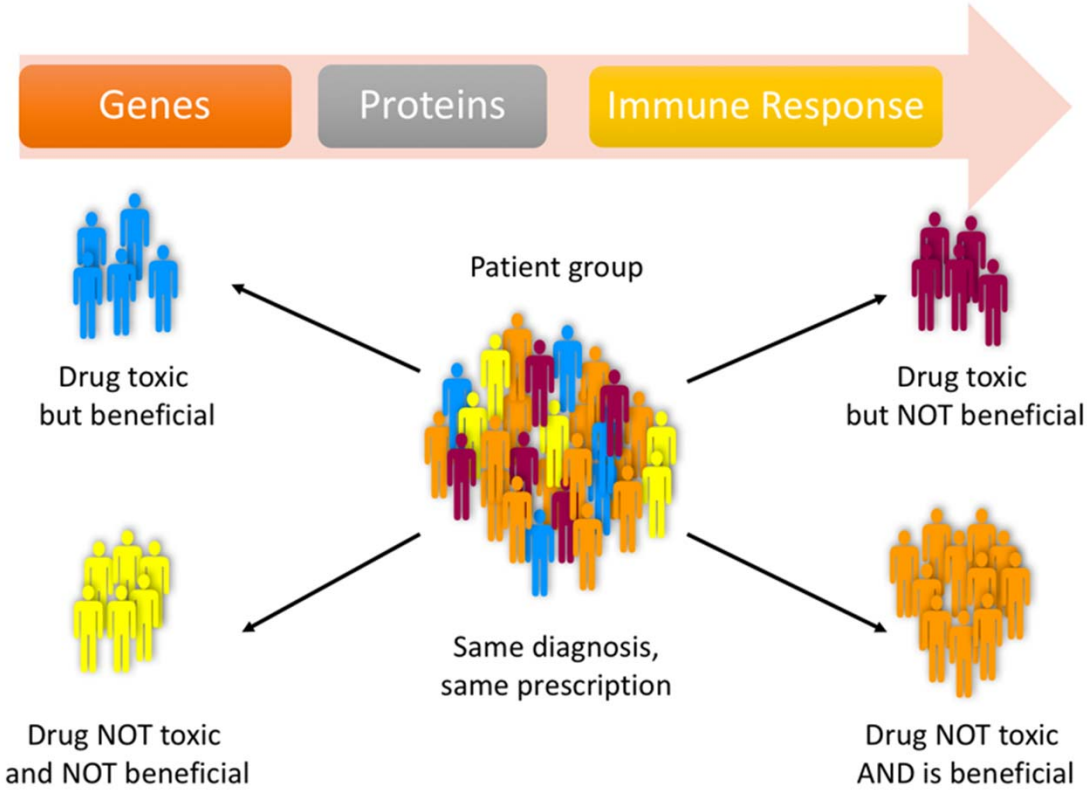


Worked or Working:	**Untested:**
Bevacizumab Parp inhibitors FR targeting	Immunotherapy

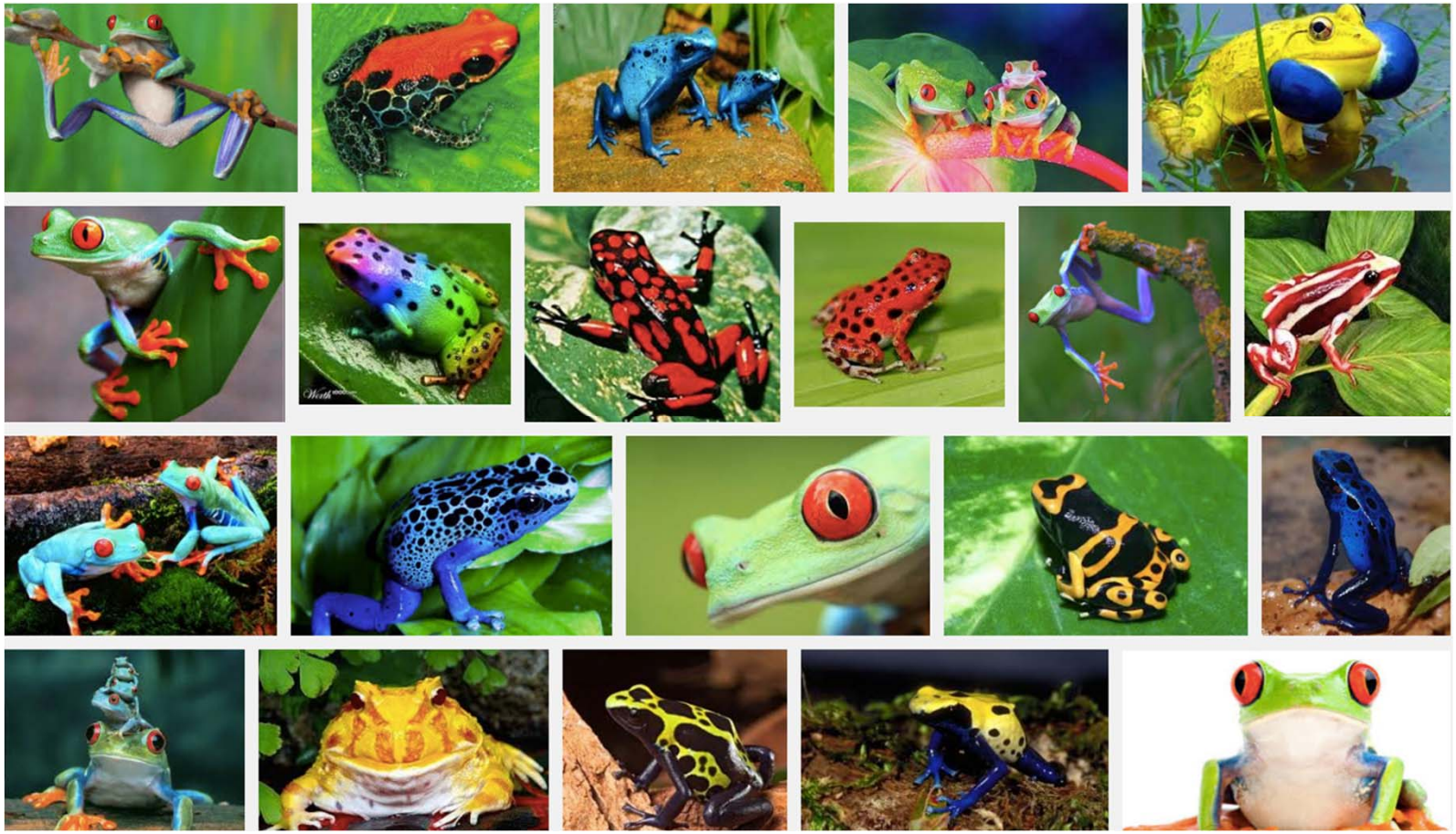
‘From kissing frogs to find a prince’ to “can we kiss fewer frogs and find more princes”



What do we want to achieve with targeted therapy?



Spot the prince



Treatment of Ovarian Cancer: 3 decades

Surgery

- Surgery important: optimal debulking. Ideally R0
- Upfront if possible
- Interval debulking if not upfront
- Recurrent: Platinum sensitive - debulking improves PFS
- REDUCING DISEASE BULK
- REDUCING CLONAL DIVERSITY

Chemotherapy and concurrent

- Backbone is platinum and taxane
- 3 chemo drugs not better than 2 given optimally
- IP chemo post optimal debulking
- Bevacizumab improves PFS in optimally and sub-optimally debulked patients
- Bevacizumab improves OS in high risk patients (sub-optimal and stage IV)

Sequential: Maintenance Parp inhibitor therapy in recurrence: BRCA or all responders in a front line setting

Ovarian Cancer Treatment Game Changer #1: Bevacizumab

- First line
  - Improve PFS
  - Improve Survival in high risk disease
    - Sub-optimally debulked
    - Residual disease
  - IV vs IP
    - Addition of Bev means no difference between IV and IP
  - Standard IV vs Dose Dense
    - No difference in dose dense
    - Improves standard 3w schedule PFS
- Recurrent Disease
  - Platinum Sensitive
    - Oceans Trial: Improved PFS (not OS)
    - ICON6: Cediranib improves PFS and ?OS but not powered
  - Platinum Resistant
    - Aurelia: Improves PFS, QL, OS
  - Single Agent Bev
    - Controls ascites/effusions
    - Palliative benefit

Ovarian Cancer Treatment Game Changer #2: Parp inhibitors

- Impressive activity: Regulatory approval for recurrent disease
  - Platinum sensitive maintenance (US and Canada: irrespective of BRCA)
  - Plat sensitive – 3/4th line therapy in US
  - Activity: mBRCA germline and somatic
  - Sequential, maintenance strategies effective
  - Combination with chemotherapy difficult; combination with targeted agents feasible and effective
  - Platinum sensitivity is a predictive functional biomarker
  - Activity goes beyond mBRCA

Game changer #3

Outcomes of Importance Patients with cancer.

Tannock.

FORWARD II UPDATE

David O'Malley, MD

James Cancer Center
The Ohio State Univerity Wexner Medical Center

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LABEL EXPANSION:

BECOME THE COMBINATION AGENT OF CHOICE

FORWARD II

ENROLLMENT:

Patients with recurrent platinum-resistant or platinum-sensitive FRα-positive ovarian cancer

MIRVETUXIMAB

AVASTIN®

Avastin® expansion cohort ongoing

KEYTRUDA®

Keytruda® expansion cohort ongoing

CARBOPLATIN

Mirvetuximab + carboplatin + Avastin® triplet expansion cohort ongoing

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NEED FOR EFFECTIVE COMBINATIONS

CURRENT TREATMENTS FOR BOTH PLATINUM-RESISTANT AND PLATINUM-SENSITIVE OVARIAN CANCER

PLATINUM-RESISTANT OVARIAN CANCER	AURELIA[1]
Regimen	Chemo/Avastin
Median age	61
Patient population	Platinum resist 1-2 priors 60% - 1 prior 40% - 2 prior
Prior Avastin	7%
ORR	27%
mPFS (mo)	6.7 (95% 5.7, 7.9)

PLATINUM-SENSITIVE OVARIAN CANCER	OCEANs[2]	GOG213[3]
Regimen	Carbo/Gem	Carbo/Tax
Median age	61	60
Patient population	plat sensitive, 1 prior	plat sensitive, 1 prior
Prior Avastin	0	10%
ORR	57%	56%
mPFS (mo)	8.4 (95% 8.3, 9.7)	10.4 (95% 9.7-11)

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[1]Pujade-Lauraine, et al., JCO 32:1302 (2014)
[2]Aghajanian, et al., JCO 30:2039 (2012)
[3]Coleman, et al., Lancet Oncol 18:779 (2017)

MIRVETUXIMAB + AVASTIN

PATIENT DEMOGRAPHICS & BASELINE CHARACTERISTICS

CHARACTERISTIC	Avastin (n=51)
Age (median)	64
No. of prior systemic therapies, *n*	
Median (range)	3 (1-8)
Prior exposure, *n (%)*	
Avastin	26 (51)
PARP inhibitor	15 (29)

MIRVETUXIMAB + AVASTIN

TREATMENT EMERGENT ADVERSE EVENTS

The safety profile for this combination is manageable and as expected, based on known profiles of each agent

The safety profile in the expansion cohort (n=51) is consistent with escalation data presented at ASCO 2017

In the expansion cohort:

- The most commonly reported AEs were: nausea, fatigue, diarrhea, and blurred vision (45-57% of patients), which were primarily gr1 or 2

- The most frequent gr3 AE was hypertension (8 pts, 16%)

Escalation Data ASCO 2017

TREATMENT EMERGENT ADVERSE EVENTS: >20% (ALL GRADES)

PREFERRED TERM	BEV (n = 14)
Abdominal distension (%)	3 (21.4)
Abdominal pain (%)	3 (21.4)
ALT increased (%)	3 (21.4)
Anemia (%)	3 (21.4)
AST increased (%)	3 (21.4)
Constipation (%)	3 (21.4)
Decreased appetite (%)	2 (14.3)
Dehydration (%)	3 (21.4)
Diarrhea (%)	7 (50.0)
Dry eye (%)	3 (21.4)
Fatigue (%)	5 (35.7)
Headache (%)	3 (21.4)
Hypertension (%)	3 (21.4)
Hypokalemia (%)	1 (7.1)
Hypomagnesemia (%)	3 (21.4)
Keratopathy* (%)	3 (21.4)
Myalgia (%)	3 (21.4)
Nausea (%)	6 (42.9)
Neutropenia (%)	2 (14.3)
Peripheral neuropathy** (%)	4 (28.6)
Proteinuria (%)	5 (35.7)
Small intestinal obstruction (%)	3 (21.4)
Stomatitis (%)	3 (21.4)
Thrombocytopenia (%)	4 (28.6)
Urinary tract infection (%)	3 (21.4)
Vision blurred (%)	6 (42.9)
Vomiting (%)	4 (28.6)

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*Includes Corneal cyst, Corneal disorder, Corneal deposits, Corneal epithelial microcysts, Keratitis, Keratopathy, Limbal stem cell deficiency, and Punctate keratitis

**Includes Neuropathy peripheral, Peripheral sensory neuropathy, Peripheral motor neuropathy, Paraesthesia, and Hypoesthesia

[1]O'Malley D et al ASCO 2017 *O'Malley D et al ASCO 2018 abstract

MIRVETUXIMAB + AVASTIN[1]

HEAVILY PRE-TREATED PLATINUM-RESISTANT

ALL (n=54)	MED + HIGH 1-3 Priors (n=23)	MED + HIGH 1-2 Priors Avastin-naïve (n=16)
43% ORR	48% ORR	50% ORR
7.8 months mPFS	9.9 months mPFS	9.9 months mPFS
10.6 months mDOR	10.6 months mDOR	12.0 months mDOR

AVASTIN
EXPANSION COHORT

- Mirvetuximab in combination with Avastin shows early evidence of anti-tumor activity with durable responses
- Greatest benefit seen among the subset of patients with medium or high FRα expression levels, which is the population being studied in the FORWARD I Phase 3 trial
- Encouraging efficacy results support further trials of this novel therapeutic combination
- Safety profile in line with known profiles of each agent

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[1]ASCO 2018 O'Malley D., et al.
Avastin® is a registered trademark of its owner.
ORR: objective response rate; mPFS: median progression-free survival; mDOR: median duration of response

MIRVETUXIMAB + CARBOPLATIN

PATIENT DEMOGRAPHICS & BASELINE CHARACTERISTICS

CHARACTERISTIC	CARBOPLATIN (n=18)
Age (range)	66 (47-82)
No. of prior systemic therapies, *n (%)*	
1-2	9 (50)
3+	9 (50)
Median (range)	3 (1-5)
FRα expression, *n (%)* (n=61)	
High 28 (48)	7 (39)
Medium 14 (23)	4 (22)
Low 18 (30)	7 (39)
Prior exposure, *n (%)*	
Platinum compounds	18 (100)
Taxanes	18 (100)
Avastin	5 (28)
PARP inhibitor	9 (50)

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O'Malley D et al ASCO 2017; Data cutoff 28 APR 2017

MIRVETUXIMAB+ CARBOPLATIN

TREATMENT EMERGENT ADVERSE EVENTS: >20% (ALL GRADES)

The safety profile for this combination is manageable and as expected, based on known profiles of each agent

Carbo: gr3 neutropenia, anemia, thrombocytopenia and hypokalemia occurred in 3, 2, 2, and 2 pts, respectively

PREFERRED TERM	CARBOPLATIN (n = 18)
Abdominal distension (%)	1 (5.6)
Abdominal pain (%)	1 (5.6)
ALT increased (%)	3 (16.7)
Anemia (%)	5 (27.8)
AST increased (%)	3 (16.7)
Constipation (%)	3 (16.7)
Decreased appetite (%)	5 (27.8)
Dehydration (%)	0 (0.0)
Diarrhea (%)	10 (55.6)
Dry eye (%)	1 (5.6)
Fatigue (%)	7 (38.9)
Headache (%)	4 (22.2)
Hypertension (%)	1 (5.6)
Hypokalemia (%)	7 (38.9)
Hypomagnesemia (%)	5 (27.8)
Keratopathy* (%)	2 (11.1)
Myalgia (%)	3 (16.7)
Nausea (%)	9 (50.0)
Neutropenia (%)	8 (44.4)
Peripheral neuropathy** (%)	6 (33.3)
Proteinuria (%)	0 (0.0)
Small intestinal obstruction (%)	0 (0.0)
Stomatitis (%)	0 (0.0)
Thrombocytopenia (%)	10 (55.6)
Urinary tract infection (%)	1 (5.6)
Vision blurred (%)	10 (55.6)
Vomiting (%)	5 (27.8)

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*Includes Corneal cyst, Corneal disorder, Corneal deposits, Corneal epithelial microcysts, Keratitis, Keratopathy, Limbal stem cell deficiency, and Punctate keratitis

**Includes Neuropathy peripheral, Peripheral sensory neuropathy, Peripheral motor neuropathy, Paraesthesia, and Hypoesthesia

[1]O'Malley D et al ASCO 2017

MIRVETUXIMAB + CARBOPLATIN[1]

PLATINUM-SENSITIVE

ALL (n=17)	MED+HIGH (n=10)
71% ORR	80% ORR
15.0 months mPFS	15.0 months mPFS
mDOR not yet reached	*mDOR not yet reached*

CARBOPLATIN

MATURE DOSE-ESCALATION COHORT FINDINGS

- Mirvetuximab in combination with carboplatin appears well-tolerated and highly active in patients with recurrent, platinum-sensitive ovarian cancer
- Further evaluation of this combination in a randomized fashion is warranted
- Recent data support ongoing triplet designed to evaluate mirvetuximab + carboplatin + Avastin in patients with recurrent platinum-sensitive disease

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[1]Company data – manuscript submitted
ORR: objective response rate; mPFS: median progression-free survival

MIRVETUXIMAB + CARBOPLATIN

PERCENT TUMOR CHANGE IN TARGET LESIONS BY FRα LEVEL

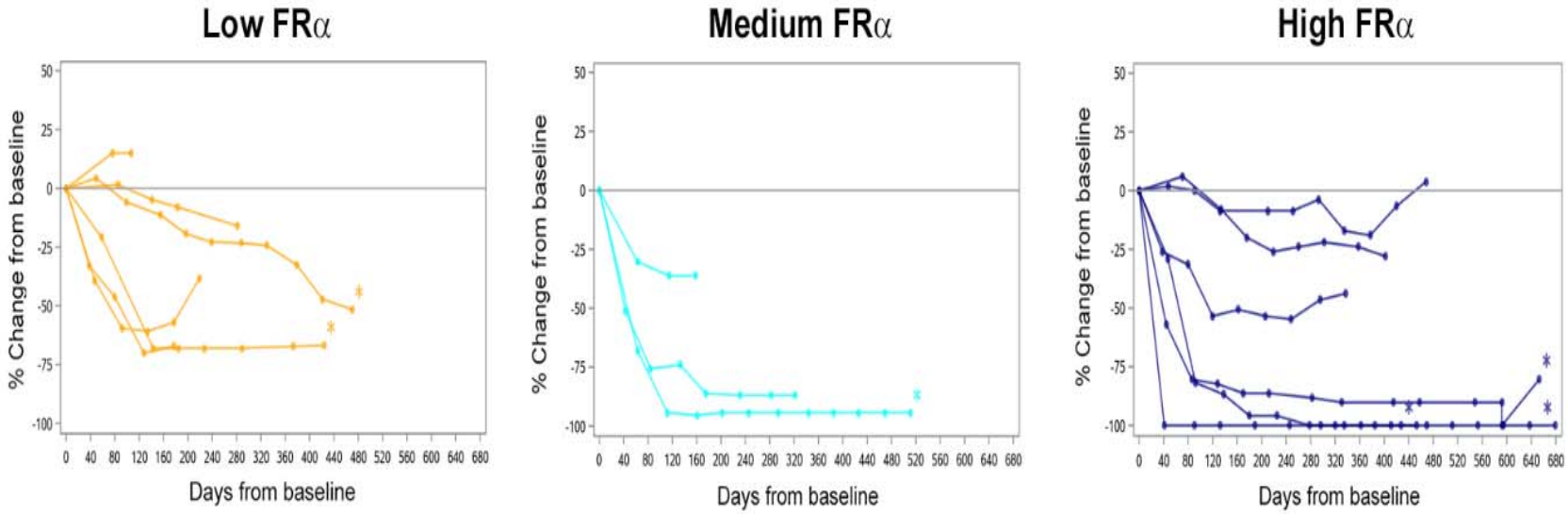

Figure 1

MIRVETUXIMAB + KEYTRUDA

PATIENT DEMOGRAPHICS AND DISEASE CHARACTERISTICS

CHARACTERISTIC	n = 14; n (%)
Age: Median (Min-Max)	63.5 (47-78)
ECOG PS n (%)	
0	8 (57%)
1	6 (43%)
No. of prior systemic therapies	
1-2	1 (7%)
3	4 (29%)
4-6	7 (50%)
7+	2 (14%)
Mean	4.5
Primary cancer diagnosis	
Epithelial ovarian cancer	9 (64%)
Fallopian tube cancer	3 (21%)
Primary peritoneal cancer	1 (7%)
Papillary ovarian cancer	1 (7%)
Prior therapy with	
Platinum compounds	14 (100%)
Taxanes	14 (100%)
Bevacizumab	6 (43%)
PARP inhibitor	7 (50%)
FRα expression	
Low	6 (43%)
Medium	3 (21%)
High	5 (36%)

Matulonis U et al SGO 2018

MIRVETUXIMAB + KEYTRUDA

TREATMENT EMERGENT ADVERSE EVENTS (AEs) >20% (N = 14) (ESCALATION PATIENTS)

- The majority of AEs reported were Grade 1 or 2 and manageable
- Only one Grade 3 AE (small intestinal obstruction) was observed in more than 2 patients; no Grade 4 events were seen
- 1 patient discontinued for a related AE (Grade 1 pneumonitis, possibly progressive)
- 1 drug-related death (colonic perforation) occurred on study

	GRADE 1		GRADE 2		GRADE 3		ALL GRADES	
ADVERSE EVENT	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
Fatigue	8	57	4	29	1	7	13	93
Nausea	6	43	3	21	2	14	11	79
Diarrhea	5	36	2	14	1	7	8	57
Dry eye	5	36	2	14	0	0	7	50
Peripheral neuropathy*	3	21	3	21	0	0	6	43
Constipation	4	29	1	7	0	0	5	36
Keratopathy**	2	1	3	21	0	0	5	36
Blurred vision	1	7	4	29	0	0	5	36
Decreased appetite	3	21	0	0	1	7	4	29
Vomiting	1	7	1	7	2	14	4	29
Anemia	1	7	2	14	0	0	3	21
Arthralgia	2	14	1	7	0	0	3	21
Dyspnea	2	14	1	7	0	0	3	21
Hypokalemia	3	21	0	0	0	0	3	21
Insomnia	3	21	0	0	0	0	3	21
Pneumonitis	3	21	0	0	0	0	3	21
Small intestinal obstruction	0	0	0	0	3	21	3	21

*Includes neuropathy peripheral and peripheral sensory neuropathy
**Includes corneal epithelial microcysts, keratitis, keratopathy, and punctate keratitis
Matulonis U et al SGO 2018

KEYTRUDA
DOSE ESCALATION COHORT

MIRVETUXIMAB + KEYTRUDA[1] PLATINUM-RESISTANT	
ALL (n=14)	MED+HIGH (n=8)
43% ORR	63% ORR
5.2 months mPFS	8.6 months mPFS
7.0 months mDOR	8.3 months mDOR

- Mirvetuximab in combination with Keytruda shows early evidence of anti-tumor activity with durable responses and favorable tolerability profile
- Greatest benefit seen among the subset of patients with medium or high FRα expression levels, which is the population being studied in the FORWARD I Phase 3 trial
- Expansion cohort completing enrollment, expect to report initial findings later this year

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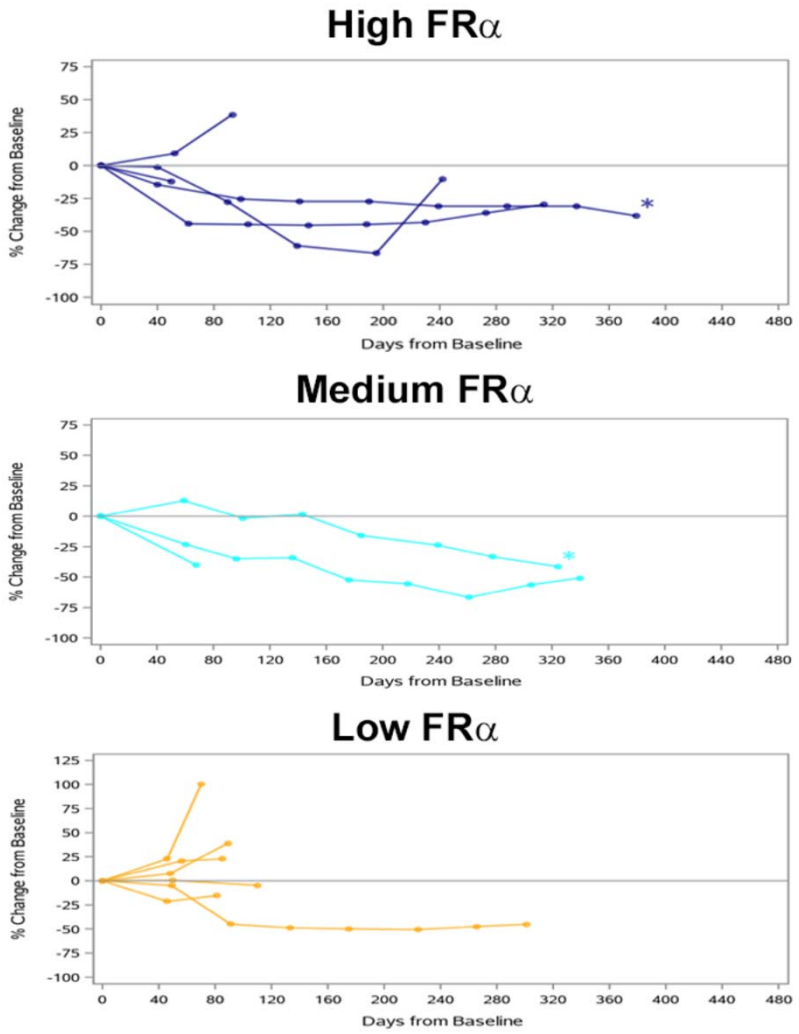
[1]SGO 2018 Matulonis U., et al.
Keytruda® is a registered trademark of its owner.
ORR: objective response rate; mPFS: median progression-free survival; mDOR: median duration of response

MIRVETUXIMAB + KEYTRUDA

PERCENT TUMOR CHANGE IN TARGET LESIONS BY FRα LEVEL



* Indicates patient is ongoing; Matulonis U et al SGO 2018

MIRVETUXIMAB COMBINATIONS OFFER POTENTIAL TO TREAT MORE WOMEN WITH OVARIAN CANCER

AVASTIN[1]

HEAVILY PRE-TREATED PLATINUM-RESISTANT
Med. No. of Prior Therapies (Range): 3 (1-8)

ALL (n=54)	MED + HIGH 1-3 Priors (n=23)	MED + HIGH 1-2 Priors Avastin-naïve (n=16)
43% ORR	48% ORR	50% ORR
7.8 months mPFS	9.9 months mPFS	9.9 months mPFS
10.6 months mDOR	10.6 months mDOR	12.0 months mDOR

CARBOPLATIN[2]

PLATINUM-SENSITIVE
Med. No. of Prior Therapies (Range): 2.5 (1-6)

ALL (n=17)	MED+HIGH (n=10)
71% ORR (95% CI 44,90)	80% ORR (95% CI 44,98)
15.0 months mPFS (95% CI 9.9,-)	15.0 months mPFS (95% CI 9.9,-)
mDOR not yet reached	*mDOR not yet reached*

KEYTRUDA[3]

PLATINUM-RESISTANT
Med. No. of Prior Therapies (Range): 4.5 (2-7)

ALL (n=14)	MED + HIGH (n=8)
43% ORR (95% CI 18,71)	63% ORR (95% CI 25,92)
5.2 months mPFS (95% CI 1.6,9.5)	8.6 months mPFS (95% CI 1.6,-)
7.0 months mDOR (95% CI 3.4,-)	8.3 months mDOR (95% CI 3.4,-)

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[1]ASCO 2018 O'Malley D., et al.; [2]Company data – manuscript in preparation; [3]SGO 2018 Matulonis U., et al.
Avastin® and Keytruda® are registered trademarks of their respective owners.
ORR: objective response rate; mPFS: median progression-free survival; mDOR: median duration of response

MIRVETUXIMAB COMBINATIONS OFFER POTENTIAL TO TREAT MORE WOMEN WITH OVARIAN CANCER[1]

CONSISTENCY OF FINDINGS UNDERSCORE POTENTIAL OF MIRVETUXIMAB TO TREAT PATIENTS WITH PLATINUM-RESISTANT AND PLATINUM-SENSITIVE OVARIAN CANCER

- Results have indicated a favorable safety profile with adverse events in-line with known profiles of each agent – full dose of each agent able to be combined
- Encouraged by early evidence of anti-tumor activity with durable responses
- Recent data support ongoing triplet designed to evaluate a mirvetuximab + carboplatin + Avastin in patients with recurrent platinum-sensitive disease
- Totality of data will guide next stages of development and support path to registration for combination regimens

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[1]O'Malley et al, abstract 5553, ASCO 2017