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Quality of content reporting on two major oncology media websites: OncLive and Targeted Oncology

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ABSTRACT

Introduction: Oncology media websites such as Oncology Live (OncLive) and Targeted Oncology (TargetedOnc) play an important role in the dissemination of oncology news to patients and clinicians; however, the quality of the content on these websites has not been assessed. Our study aimed to analyze content from these websites and assess financial conflicts of interest (FCOI) amongst speakers interviewed on these websites.

Methods: Articles published on OncLive and TargetedOnc during October 2021, were prospectively captured and analyzed. The primary outcome of our study was the quality of oncology news reporting in OncLive and TargetedOnc. We assessed the FCOI amongst speakers using data from Open Payments.

Results: We examined 196 articles (OncLive 108, TargetedOnc 88). Limitations of cited research were reported in 7% (7/105) of OncLive and zero TargetedOnc articles. Benefit and risks in absolute numbers were reported in 28% (28/99) of OncLive and 16% (7/45) of TargetedOnc articles. Independent experts were quoted in 47% (51/108) and 51% (44/86) of the OncLive and TargetedOnc articles, respectively (*Table 3*). Pharmaceutical executives were quoted in 18% (20/108) and 11% (10/88) of OncLive and TargetedOnc articles, respectively. No FCOI disclosures were listed or reported for any articles. The mean general payment received from industry by United States physicians was \$63,861 in 2019 and \$39,639 in 2020.

Conclusion: Our study demonstrates low quality and potentially biased reporting of oncology news on OncLive and TargetedOnc. Careful safeguards, oversight and reporting of relevant FCOI are needed to maintain the quality and transparency of content being provided.

1. Introduction

Advances in cancer medicine occur at a rapid pace with many new drugs approved each year [1]. Landmark clinical trials are published weekly, and critical discussion of new data happens in real time, on social media, news outlets, podcasts and conferences. Keeping pace with the rapidly expanding knowledge base is a constant challenge for practicing oncologists. Few practicing physicians may have the time, expertise, or interest to read the primary literature in depth. As such,

oncology news outlets fill an important gap; these forms of data dissemination play an important role in informing physicians of new advances, and may also shape the narrative around new trials and treatments [2]. These news websites may not be subject to the same peer review or editorial standards as medical journals, but may have advantages such as presenting succinct, relevant, and accessible information to physicians and patients. Therefore, the quality of information presented on these oncology news websites merits investigation.

A concern regarding oncology news websites is spin might be used to

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shift the discussion of drugs and therapies toward conclusions that may not be strongly supported by the existing data. Prior research has shown that oncology news written for public consumption frequently omitted limitations and conflict of interest disclosures [3]. Given the potential for spin to unduly influence clinical practice and health policy, it is important to understand factors that may increase the prevalence of spin, including financial conflicts of interest (FCOI). Studying author FCOI on oncology news sites is important because, unlike medical journals, news websites are not required to report author conflicts of interest. A significant number of studies have demonstrated that FCOI are common in oncology trial authors [4] and United States oncologists in general [5–7]. In a field where off label recommendations [8] and expanded access (compassionate use) of drugs [9] are common, close accounting of FCOI in oncology news websites is essential.

We sought to systematically characterize the quality of reporting and the FCOI in two of the most well-recognized oncology news websites - Oncology Live (OncLive) and Targeted Oncology (TargetedOnc).

2. Methods

This study was conducted without any dedicated funding and did not include human subjects. We prospectively collected data from OncLive and TargetedOnc from October 1, 2021, until October 31, 2021, corresponding with the first whole month immediately following development of our study protocol. We included any news articles that discussed cancer treatments, including reviews, case discussions, and expert interviews, and included all cancers and treatment modalities. We did not include FDA press release articles, articles that narrated findings of a clinical trial without additional interpretation or analysis, publications of abstracts from major meetings, or news articles not related to cancer treatment. NS, GRM, and CW conducted a pilot analysis of 3 studies to finalize the inclusion/exclusion criteria and the data extraction form. NS and GRM independently screened all studies for inclusion and resolved any conflict through mutual discussion.

Three independent reviewers (NS, GRM, KN) reviewed the included publications and graded each for quality using a scoring matrix modified from Saunders et al. [3] for this study (Table 1). This scoring matrix has been previously used to assess the bias and quality in media reporting of cancer research. Only applicable scoring criteria were applied to included articles; for example, articles on case-based discussion were not scored for absolute risks and benefits, identifying study limitations etc. Articles were classified as ‘misleading’ if they contained sensational headlines despite marginal benefit and/or efficacy claims on phase 1 studies. We further extracted financial payments from pharmaceutical companies to individual authors or interviewees in included articles. To quantify potential FCOI for oncologists included in the media reports we used the Open Payments Database (<https://openpaymentsdata.cms.gov>) to extract payments data. Since only United States physicians are included in the database, we did not include non-US physicians and non-physicians (PhD, PharmD) in this analysis. We extracted general payments from the manufacturers of cancer therapies mentioned in news articles for the two years preceding the publication of the articles (January 2019 to December 2020). General payments are defined as direct payments to physicians for services such as consulting or speaking and reimbursement for travel, food, and beverages [10]. These general payments are unique in that they are not routed through an individual’s institution like research payments, but rather are paid directly to scientists and doctors by drug manufacturers. A separate excel sheet was created identifying the speakers appearing on these websites. Experts appearing on more than one occasion were accounted for only once and 115 US-based clinicians were identified. We collected general payment information on these US-based clinicians and compared it to the mean payment received by hematology-oncology specialists in the US.

All data were collated and analyzed using Microsoft Excel. We used measures of central tendency (medians and interquartile ranges) to summarize our data.

Table 1
Matrix for grading included articles.

Criteria	Scoring	Comments
1. Conflict of interest or funding source identified	0,1 (no, yes)	Conflict of interest or funding source had to be mentioned.
2. Independent expert (s) quoted	0,1 (no, yes)	Independent experts must not be affiliated with the study
3. Link to research source	0,1 (no, yes)	Links must lead directly to research source (published paper, conference abstract etc.). Links to journal homepage received 0 for this criterion.
4. Traceable research source	0,1 (no, yes)	Enough information provided to allow tracing the source within 5 min.
5. Study limitation identified	0,1 (no, yes)	Required mentioning a limitation of the study’s methodology, conclusion, or implications. Mentioning adverse events was not sufficient to fulfill the criteria.
6. Placed study in broader research context	0,1 (no, yes)	The report should refer to related knowledge or theories generated by researchers unaffiliated with the study in focus.
7. Absolute risk or benefits quantified	0,1 (no, yes)	Risks and benefits should be described in absolute numbers (percentage or total incidences do not fulfill these requirements).
8. Misleading headlines	0,1 (yes, no)	Included sensationalizing, incorrect, or misleading headlines
9. Emphasis maintained	0–3	The main aim, outcomes, and implications as presented in the study should be maintained in the headline and the body of the report. The articles were scored as follows: emphasis maintained in neither headline nor body (0), in either headline or body (1), in both headline and most of body (2), in both headline and all of body (3)
10. Avoided overgeneralization	0–3	Overgeneralization could refer to sample population not representative of general population or the result of the study only applicable to a specific subset of patient population. Scores allocated as: both headline and body overgeneralized (0), either headline or body overgeneralized (1), headline and body mostly avoided overgeneralization (2), headline and all of body avoided overgeneralization (3).

3. Results

3.1. Number of studies

The initial search strategy yielded 308 results. After we excluded 112 articles not meeting the inclusion criteria, 196 articles remained for final analysis (Fig. 1.).

3.2. Characteristics of included studies

196 articles were analyzed (OncLive 108, TargetedOnc 88). The majority were expert/panel and case-based discussions (OncLive: 56/108, 52%; TargetedOnc: 53/88, 60%). Pharmaceutical executives discussed the trial outcomes 20 times (20/108, 18%) and 10 times (10/88, 11%) in OncLive and TargetedOnc. Opinions from lead authors on trial outcomes were analyzed 28 times (28/108, 26%) in OncLive and 20 times (20/88, 23%) in TargetedOnc (Table 2).

3.3. Quality of content

FCOI disclosures were absent in all the articles published in both

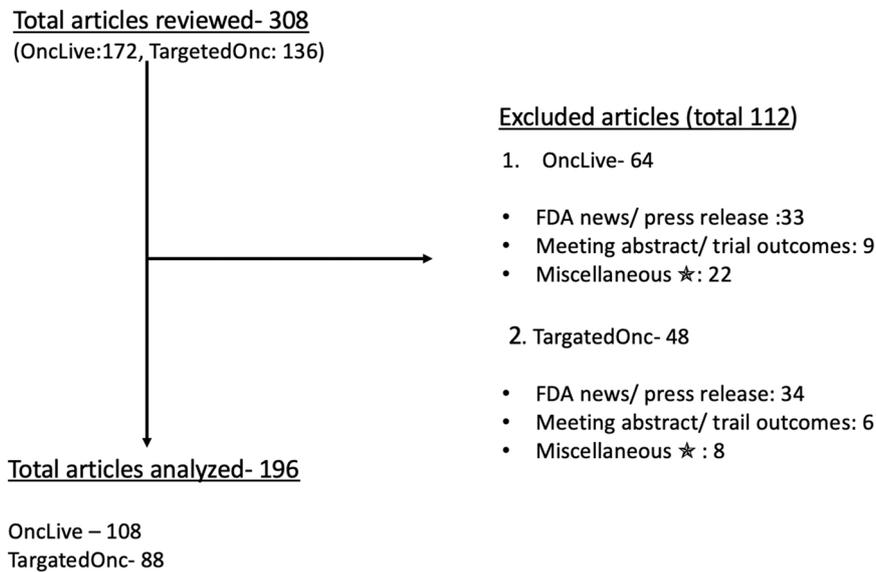


Fig. 1. Flow diagram depicting search strategy and study inclusion (* articles without expert opinion, no discussion on cancer treatment, no new drugs general opinion outside cancer care).

Table 2
Characteristics of included articles.

	OncLive (n = 108), %	TargetedOnc (n = 88), %
Expert / Panel/ case-based discussion	56 (52)	53 (60)
Pharmaceutical employee interview	20 (18)	10 (11)
Lead authors discussion on study outcomes	28 (26)	20 (23)
Others	4 (4)	5 (6)

oncology news websites. Independent experts were quoted in 47% (51/108) and 51% (44/86) of the articles discussed in OncLive and TargetedOnc. A direct link to the primary literature was provided in 15% (16/108) of articles in OncLive and 17% (13/75) in TargetedOnc. Where a link was provided, it frequently led to a similar previous article on the respective website. Sufficient information to trace the primary source of literature, accessible in < 5 min, was provided in 93% (101/108) and 61% (54/88) of OncLive and TargetedOnc articles, respectively.

Study limitations, including study design, generalizability, and side effects were reported in only 7% (7/105) of OncLive news articles and zero TargetedOnc news articles. Reporting of benefit/risks in absolute numbers was low at 28% (28/99) for OncLive and 16% (7/45) for TargetedOnc. Misleading headlines were seen in a small number of articles at 9% (10/108) and 3% (3/88). Emphasis was maintained throughout the headline and body in 45% (49/108) and 57% (50/88) of articles in OncLive and TargetedOnc. Overgeneralization (either in headline or body) was seen in 57% (62/108) and 52% (46/88) articles in OncLive and TargetedOnc respectively. [Table 3](#) summarizes the quality outcomes among analyzed articles.

3.4. Financial conflict of interest/general payments

Information on general payments received was analyzed for the included speakers for years 2019 and 2020 (until October 2020). Among 115 speakers, general payment information was available for all except one (114/115, 99%). The mean general payments received by speakers during this period (2019 and 2020) were \$63,861 and \$39,639 respectively; the median general payments of speakers during the same period were \$36,787 and \$20,844, with payments ranging from \$0 to \$701,540 in 2019 and \$0 to \$503,642 in 2020. In 2019, a total of 75%

Table 3
Results of quality outcomes among analyzed articles.

	OncLive: %, (n = 108)	TargetedOnc: %, (n = 88)
1. FCOI disclosure	0, (0/108)	0, (0/88)
2. Independent expert (s) quoted	47, (51/108)	51, (44/86 [#])
3. Direct link to primary literature	15, (16/108)	17, (13/75 [#])
4. Traceable research source (<5 min)	93, (101/108)	61, (54/88)
5. Study limitations identified	7, (7/105 [#])	0, (0/88)
6. Study placed in broader context	77, (83/108)	54, (26/48 [#])
7. Absolute benefit/ risk quantified	28, (28/99 [#])	16, (7/45 [#])
8. Misleading headlines	9, (10/108)	3, (3/88)
9. Emphasis maintained	45, (49/108)	57, (50/88)
10. Overgeneralization	57, (62/108)	52, (46/88)

(#: only articles with information on parameters being analyzed could be rated, and hence denominator may vary #)

(87/115) and in 2020, 66% (76/115) of speakers received payments greater than \$10,000. Similarly, speakers receiving payments greater than \$100,000 during 2019 and 2020 were 15% (18/115) and 8% (9/115) respectively. In comparison, the mean general payments for US hematology-oncology physicians during this period was \$8326 and \$6007 respectively for 2019 and 2020. Neither OncLive nor TargetedOnc disclosed FCOI in any of the 196 articles we analyzed.

4. Discussion

Our analysis of the quality of reporting on oncology news websites reveals significant concerns in the discussion and interpretation of oncology news. Both OncLive and TargetedOnc quoted independent experts in only about half of the articles, and only 7% of their articles mentioned at least one study limitation. Overall, the sites presented a favorable and uncritical analysis of oncology news, a concerning finding given the widespread use of these websites.

Our analysis also shows that FCOI is very common amongst the physicians interviewed on these websites, though seldom disclosed. This finding mirrors prior results examining hematologist-oncologists active on Twitter, and oncology podcasts [11–13]. The modern paradigm of research in oncology requires close coordination between academia and industry; although these interactions are essential to advancing the field,

it has been demonstrated that FCOI can influence medical decisions and physician behavior [14–16]. Moreover, our investigation examined only general payments—made from companies to the practicing physician—and not research payments—made to an institution to support ongoing collaborations. We acknowledge that investigators from academic institutions that are subspecialists in their fields are more likely to be invited to these oncology news websites and are also more likely to have conflicts of interest. Nevertheless, at the minimum, transparent reporting of these relationships and potential conflicts on oncology websites is necessary.

Our results suggest the need for reforms. We offer two suggestions, but additionally recommend that further research be conducted to validate our recommendations. First, it is crucial that a fair balance of benefits and harms is discussed in the oncology news articles. It is well-known that the published literature is subject to publication bias – the phenomenon wherein favorable results are more likely to be published than unfavorable results [17]. Among other problems, publication bias affects the interpretation of published data, because the portfolio of published research is likely to be more favorable than the full suite of findings across published and unpublished results. Our study found that the oncology news articles failed to discuss even the benefits and harms from the published study, an omission which likely serves to multiply the effects of publication bias on readers of OnLive and TargetedOnc. To ensure a fair balance of benefits and harms are discussed, we recommend every OnLive and TargetedOnc article include an independent expert who does not have a financial relationship with the relevant drug manufacturer for an interview or a comment. By doing so, these news articles will be more balanced, and will better aid doctors in translating published research to clinical practice. Ideally experts should be sought with a diversity of viewpoints.

Second, we recommend that OnLive and TargetedOnc avoid spin. Spin is defined as the misrepresentation or distortion of research data [18]. Spin may manifest in multiple ways, but typically involves intentionally or unintentionally downplaying harms or over-hyping benefits. In oncology, it has been shown that clinical trials often over-emphasize favorable post-hoc subgroup analyses or surrogate endpoints while detracting from unfavorable patient-important endpoints such as overall survival [19]. One study demonstrated that oncology endpoints registered on ClinicalTrials.gov were not reported in final publications if they were not statistically significant [20]. The SPIIN [21] trial has demonstrated that abstracts with spin, compared to those re-written without spin, were more likely to be reviewed by oncologists as being beneficial to patients.

For instance, in a news article published in OnLive, the SEAL trial of selinexor for the treatment of advanced, refractory dedifferentiated liposarcoma was discussed. In particular, the lead study author was quoted as saying “selinexor conferred a 30% improvement in PFS (progression-free survival) [22]. While this statement is factually true based on the hazard ratio of 0.7, it lacks context and highlights the concern with failing to quote independent experts in these articles. Selinexor improved PFS by 0.7 months over placebo, which is an important finding, but one that places the 30% benefit in the context of the disease. As stated previously, such spin in these oncology news articles may affect oncologists’ interpretations of the SEAL trial. Some examples of similar articles published are noted in Table 4.

Although our analysis of FCOI was limited to practicing US physicians, we demonstrate the high prevalence among the interviewees/experts appearing in these websites, with significant monetary value, disproportionately higher (at least 6 times) when compared to the specialty average. Furthermore, along with the complete omission of FCOIs disclosure on the part of the speakers, there is also no disclosure of the compensation made by these websites to the invited speakers. This further raises questions about the effectiveness of the well-intended Sunshine law [23], and the need for amendments including disclosure of payments made via third parties. Furthermore, the funding mechanisms for these websites may need to be transparently reported, as this

Table 4

Examples of articles with misleading headlines.

Article Headline	Actual trial outcome
1. Durvalumab plus Chemo Significantly Improves OS in Frontline Advanced Biliary Tract Cancer (<i>TOPAZ-1 trial</i>) [24]	OS benefit – 12.8 months Vs 11.5 months. (HR- 0.80 (95% CI- 0.66–0.97, P = 0.021)
2. Adjuvant Pertuzumab- Based regimen Sustains Clinical Benefit in 8 Year Follow Up in HER 2 + Early Breast cancer (<i>APHINITY trial</i>) [25]	At median follow up of 8.4 years OS rates in pertuzumab based therapy 92.7% Vs 92% in standard therapy arm (HR- 0.83; 95% CI: 0.68–1.02)
3. Catequentinib Proves Efficacious, Well Tolerated in Synovial Sarcoma [26]	Median PFS 2.89 months compared to 1.64 months with dacarbazine (HR- 0.45; 95% CI, 1.45–2.70)

mechanism may provide a means for the industry to pay physicians in a way that does not require reporting. We note that failure to disclose has been seen repeatedly in oncology on social media and in podcasts, as well [11–13].

There are limitations to our analysis. We only chose one month of data analysis, and as such our analysis may not be reflective of year-round content. The choice of October was intentional as the cohort of publications during this month was thought to be more representative of year-round content on these websites (as no major international oncology meetings happen in October). To maintain objectivity and minimize bias, the selected articles were analyzed by 3 independent reviewers using the previously used matrix for grading the quality of medical literature, and grading was made on each category where applicable; nevertheless, we recognize the inherent subjectivity of such grading methods. Owing to the inherent limitation of the Sunshine act, FCOI was only analyzed among US based physicians and PhDs, and as a result pharmaceutical employees and non-US based physicians were excluded. We also recognize that academic oncologists are likely to have higher FCOI than non-academic oncologists, and by virtue of their expertise, academic oncologists are more likely to be invited to give interviews on such platforms. The higher FCOI thus could simply reflect the preponderance of academic physicians on such platforms. However, as our study demonstrates, conflicts of interest should be transparently listed to allow for objective evaluation by the reader. One could make an argument that because the articles published on these websites are not scientific presentations per se, the publishing guidelines do not apply; however, because these websites serve as a means for knowledge dissemination, they should still be subject to a higher ethical standard than a simple company press release.

In summary, among two commonly used oncology news websites, we demonstrate low quality of the content reported, bias and spin in how the results are presented, and a lack of disclosure of financial conflicts of interests amongst those interviewed. As these websites may serve an important role in bringing news to patients and health care providers, further steps are needed to improve the quality of the content reported.

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Authorship Contributions

GRM and VP conceived the research idea. NS and JL performed the initial literature review. NS, GRM, and KN collected data, performed statistical analysis. NS and JL wrote the initial draft of the manuscript. CW and GRM provided critical input on the methodology and analysis. KB, CB, AM, AG, and VP provided critical input on the methodology and final draft of the manuscript. All authors reviewed and approved the final version of the manuscript.

Conflict of Interest Disclosures

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References

- [1] Global Oncology Trends 2018 [Internet], 2018 [cited 2022 Sep 14] Available from: <https://www.iqvia.com/insights/the-iqvia-institute/reports/global-oncology-trends-2018>.
- [2] A. Chidharla, A. Utengen, D.J. Attai, et al., Social media and professional development for oncology professionals, *JCO Oncol. Pract.* 18 (2022) 566–571.
- [3] A. Amberg, D.N. Saunders, Cancer in the news: bias and quality in media reporting of cancer research, *PLoS One* 15 (2020), e0242133.
- [4] C. Wayant, E. Turner, C. Meyer, et al., Financial conflicts of interest among oncologist authors of reports of clinical drug trials, *JAMA Oncol.* 4 (2018) 1426–1428.
- [5] E.S. Tarras, D.C. Marshall, K. Rosenzweig, et al., Trends in industry payments to medical oncologists in the United States since the inception of the open payments program, 2014 to 2019, *JAMA Oncol.* 7 (2021) 440–444.
- [6] L.A. Hampson, S. Joffe, R. Fowler, et al., Frequency, type, and monetary value of financial conflicts of interest in cancer clinical research, *J. Clin. Oncol.* 25 (2007) 3609–3614.
- [7] K. Wright, D.E. Meyers, T.M. Chisamore, et al., Industry relationships with medical oncologists: who are the high-payment physicians?, in: *JCO Oncol. Pract.*, 18, 2022, pp. e1164–e1169.
- [8] J. Wagner, J. Marquart, J. Ruby, et al., Frequency and level of evidence used in recommendations by the National Comprehensive Cancer Network guidelines beyond approvals of the US Food and Drug Administration: retrospective observational study [Internet], *BMJ* 360 (2018). Available from: <https://www.bmj.com/content/360/bmj.k668.full>.
- [9] J. Borysowski, A.C.F. Lewis, A. Górski, Conflicts of interest in oncology expanded access studies, *Int. J. Cancer* 149 (10) (2021) 1809–1816, <https://doi.org/10.1002/ijc.33733>.
- [10] V.K. Prasad, *Malignant: How Bad Policy and Bad Evidence Harm People with Cancer*, Johns Hopkins University Press, 2020.
- [11] D.L. Tao, A. Boothby, J. McLouth, et al., Financial conflicts of interest among hematologist-oncologists on Twitter, *JAMA Intern Med.* 177 (2017) 425–427.
- [12] V. Kaestner, A. Brown, D. Tao, et al., Conflicts of interest in Twitter, *Lancet Haematol.* 4 (2017) e408–e409.
- [13] E.G. Akman, K. Powell, A. Haslam, et al., Characteristics of oncology podcasts: attitudes, speakers, conflicts, *J. Cancer Policy* 32 (2022), 100329.
- [14] R.D. Nipp, B. Moy, No conflict, no interest, *JAMA Oncol.* 2 (2016) 1631–1632.
- [15] B. Moy, A.R. Bradbury, P.R. Helft, et al., Correlation between financial relationships with commercial interests and research prominence at an oncology meeting, *J. Clin. Oncol.* 31 (2013) 2678–2684.
- [16] C. DeJong, T. Aguilar, C.-W. Tseng, et al., Pharmaceutical industry-sponsored meals and physician prescribing patterns for medicare beneficiaries, *JAMA Intern. Med.* 176 (2016) 1114–1122.
- [17] K. Dickersin, The existence of publication bias and risk factors for its occurrence, *JAMA* 263 (1990) 1385–1389.
- [18] I. Boutron, S. Dutton, P. Ravaut, et al., Reporting and interpretation of randomized controlled trials with statistically nonsignificant results for primary outcomes, *JAMA* 303 (2010) 2058–2064.
- [19] C. Wayant, D. Margalski, K. Vaughn, et al., Evaluation of spin in oncology clinical trials, *Crit. Rev. Oncol. Hematol.* 144 (2019), 102821.
- [20] B. You, H.K. Gan, G. Pond, et al., Consistency in the analysis and reporting of primary end points in oncology randomized controlled trials from registration to publication: a systematic review, *J. Clin. Oncol.* 30 (2012) 210–216.
- [21] I. Boutron, D.G. Altman, S. Hopewell, et al., Impact of spin in the abstracts of articles reporting results of randomized controlled trials in the field of cancer: the SPIIN randomized controlled trial, *J. Clin. Oncol.* 32 (2014) 4120–4126.
- [22] OncLive: Selinexor improves PFS, Time to Next Treatment in Advanced, Metastatic Dedifferentiated Liposarcoma [Internet][cited 2022 Jun 29] Available from: <https://www.onclive.com/view/selinexor-improves-pfs-time-to-next-treatment-in-advanced-metastatic-dedifferentiated-liposarcoma>
- [23] J. Lexchin, A. Fugh-Berman, A ray of sunshine: transparency in physician-industry relationships is not enough, *J. Gen. Intern Med.* 36 (2021) 3194–3198.
- [24] OncLive: Durvalumab Plus Chemo Significantly Improves OS in Frontline Advanced Biliary Tract Cancer [Internet], 2021 [cited 2022 Sep 14] Available from: <https://www.onclive.com/view/durvalumab-plus-chemo-significantly-improves-os-in-frontline-advanced-biliary-tract-cancer>
- [25] OncLive: Adjuvant Pertuzumab-Based Regimen Sustains Clinical Benefit in 8-Year Follow-Up in HER2+ Early Breast Cancer [Internet], 2022 [cited 2022 Sep 14] Available from: <https://www.onclive.com/view/adjuvant-pertuzumab-based-regimen-sustains-clinical-benefit-in-8-year-follow-up-in-her2-early-breast-cancer>
- [26] OncLive: Catequentinib Proves Efficacious, Well Tolerated in Synovial Sarcoma [Internet], 2021 [cited 2022 Sep 14] Available from: <https://www.onclive.com/view/catequentinib-proves-efficacious-well-tolerated-in-synovial-sarcoma>