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## Squamous cell carcinoma with EPIDERMOLYSIS BULLOSA in COVID-19 And the challenges

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If you would like to request any articles or any further help, please contact:  Semanti Chakraborty at [semanti.chakraborty@uhb.nhs.uk](mailto:semanti.chakraborty@uhb.nhs.uk)

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**Sources searched**  
BMJ Best Practice (1)  
DynaMed (1)  
EMBASE (27)  
MEDLINE (15)  
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## A. Synopses or Summaries

#### BMJ Best Practice

**Squamous cell carcinoma of the skin** (2020)

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#### DynaMed

**Cutaneous Squamous Cell Carcinoma** (2018)

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=ee0445ffa3fb5650492409e98680937d)

## B. Original Research

1. **A case report with COVID-19 during perioperative period of lobectomy**  
   Han P. Medicine 2020;99(22):No page numbers.

RATIONALE: Currently, COVID-19 has made a significant impact on many countries in the world. However, there have been no reported cases of pulmonary lobectomy with Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-COV-2) infection. We are the first to report such a case. PATIENT CONCERNS: We report a 63-year-old Wuhan male patient with smoking history of 40 cigarettes per day for 40 years. He sought medical consultation for right lower lung nodules found by CT scan. DIAGNOSES AND INTERVENTIONS: The patient's postoperative pathological diagnosis was squamous cell carcinoma of the right lower lung. On the fourth day after the operation, the real-time reverse transcription polymerase chain reaction test showed a positive result. After the operation, we routinely give symptomatic treatments such as anti-infection, nebulization and oxygen inhalation. We also change antibiotics several times depending on the patient's condition. <br/>OUTCOME(S): The patient's condition continued to deteriorate. On the fifth day after surgery, the patient died despite medical treatment. LESSONS: We are the first to report the diagnosis and treatment process of patients with COVID-19 during perioperative period of lobectomy. It provides a case for the postoperative management of such patients.

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[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=dc144939a79f49144a5644d319f41ebd)

1. **Biological behavior of oral squamous cell carcinoma in the background of novel corona virus infection**  
   Sarode S.C. Oral Oncology 2020;:No page numbers.

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=ca9e664474f4a7c1c63ee534dc374b60)

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=711e1555e9c7ed49bf0f9310574623bb)

1. **Canadian society of clinical chemists (CSCC) interim consensus guidance for testing and reporting of SARS-CoV-2 serology**  
   Bailey D. Clinical Biochemistry 2020;:No page numbers.

Clinical laboratories across the world are working to validate and perform testing for SARS-CoV-2 antibodies. Herein, we present interim consensus guidance for Canadian clinical laboratories testing and reporting SARS-CoV-2 serology, with emphasis on the capabilities and limitations of these tests and recommendations for interpretative comments in an effort to achieve harmonized laboratory practices. The consensus document provides a broad overview of topics including sample type and contamination risk; kinetics of antibody response to COVID-19 and the impact on serology testing; clinical utility of SARS-CoV-2 serology testing; clinical performance of commercial laboratory-based assays commonly deployed in North America; recommendations for interim reporting; utility of SARS-CoV-2 antibody testing for pediatric patients; and utility of point-of-care testing. The information is based on the current literature and is subject to change as additional information becomes available.<br/>Copyright &#xa9; 2020

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1. **Case Report of Acute Airway Obstruction Caused by Transglottic Squamous Carcinoma (Stage IV) During the Coronavirus Pandemic Cured by ECMO-Assisted Tracheostomy**  
   Chen Z. Ear, Nose and Throat Journal 2020;:No page numbers.

Acute airway obstruction caused by invasive laryngeal cancer can make surgeons reluctant to perform a high-risk tracheostomy, which is life-saving for such patients. In the setting of the current COVID19 pandemic, we present a case of severe transglottic stenosis due to stage IV laryngeal carcinoma, in which gaseous exchange was facilitated by venovenous (VV) extracorporeal membrane oxygenation prior to emergent tracheostomy. The VV technique can ensure adequate oxygenation and CO<sub>2</sub> removal. Venovenous extracorporeal membrane oxygenation provided sufficient time for surgical planning and preparation. It reduced the formation of aerosol, lowered the risk associated with life-saving tracheostomy, and protected the patient from ischemia.<br/>Copyright &#xa9; The Author(s) 2020.

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1. **Cellular therapy options for genetic skin disorders with a focus on recessive dystrophic epidermolysis bullosa.**  
   Naso Gaetano British medical bulletin 2020;:No page numbers.

INTRODUCTIONCombinatorial cell and gene therapies for life-threatening inherited skin disorders have shown tremendous potential for preclinical and clinical implementation with significant progress made for recessive dystrophic epidermolysis bullosa (RDEB). To date, various cell lineages including resident skin cells and adult stem cells have been investigated for gene and cell therapy for RDEB reaching the clinical trial stage.SOURCES OF DATASources of data are key recent literature, ClinicalTrials.gov, Clinicaltrialsregister.eu and pharma press releases.AREAS OF AGREEMENTCell-based gene transfer using autologous patients' cells has demonstrated positive outcomes in preclinical and clinical trials and highlighted the importance of targeting resident skin stem cells to achieve a meaningful long-term effect. Additionally, adult stem cells, such as mesenchymal stromal cells, have the potential to ameliorate systemic manifestations of the disease.AREAS OF CONTROVERSYWhile proven safe, the clinical trials of localized treatment have reported only modest and transient improvements. On the other hand, the risks associated with systemic therapies remain high and should be carefully weighed against the potential benefits. It is unclear to what extent adult stem cells can contribute to skin regeneration/wound healing.GROWING POINTSFurther research is warranted in order to fulfil the potential of cellular therapies for RDEB. The development of combinatorial gene and cell-based approaches is required to achieve long-term clinical benefits.AREAS TIMELY FOR DEVELOPING RESEARCHInduced pluripotent stem cells can potentially provide a valuable source of autologous patient material for cellular therapies. In addition, recent advances in the field of gene editing can overcome hurdles associated with conventional gene addition approaches.DATA AVAILABILITY STATEMENTNo new data were generated or analysed in support of this review.

1. **Change of the diagnostic distribution in applicants to dermatology after COVID-19 pandemic: What it whispers to us?**  
   Turan C. Dermatologic Therapy 2020;33(4):No page numbers.

We aim to evaluate the change in the diagnostic spectrum in dermatology outpatient applications compared to before COVID-19. All patients were enrolled from the Department of Dermatology between February 12 and May 8, 2020, the duration of 4 weeks before COVID-19 and 8 weeks after were analyzed in three parts consisting of 4 weeks. Data obtained from the database such as age, gender, diagnoses were anonymized. Repeated applications with the same diagnosis in 10 days after the first presentation were ignored. Compared to the pre-outbreak, there was a 3.5-fold decrease in dermatology applications in the first month after COVID-19 and an 8.8-fold in the second month. We found a significant increase in the frequency of diagnoses such as generalized pruritus, pityriasis rosea, alopecia areata, bacterial skin/mucosa diseases, and zona zoster after COVID-19. The frequency declined in diseases such as verruca vulgaris, hyperpigmentation, skin tag, melanocytic nevus, and seborrheic keratosis/solar lentigo. It has been found that the frequencies of most diseases, including acne (25% of patients), did not change. We think that many factors, such as affecting the quality of life, risk perception, increased stress burden may cause a change in the diagnostic distribution of the dermatology applications.<br/>Copyright &#xa9; 2020 Wiley Periodicals LLC.

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1. **Coronavirus disease 19 (COVID-19) during chemoradiation for locally advanced oropharyngeal squamous cell carcinoma (LA-OPSCC).**  
   Denaro Nerina Oral oncology 2020;107:104801.

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=135f4c7fb71da9433e9874ba44e7df5c)

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1. **COVID-19 and skin cancer management: French nation-wide questionnaire survey from real-life practice**  
   Nardin C. Journal of Dermatological Treatment 2020;:No page numbers.

1. **COVID-19 Board: Our Multidisciplinary Cutaneous Oncology Tumor Board During the Coronavirus-19 Pandemic.**  
   Chow Maggie Dermatologic surgery : official publication for American Society for Dermatologic Surgery [et al.] 2020;46(9):1224-1225.

1. **COVID-19 outbreak in Italy: Clinical-radiological presentation and outcome in three oncologic patients**  
   Colombi D. Journal of Infection and Chemotherapy 2020;:No page numbers.

We present three patients affected by pulmonary squamous cell carcinoma, metastatic esophageal cancer and advanced non-Hodgkin lymphoma, who incurred in coronavirus 2019 (COVID-19) infection during the early phase of epidemic wave in Italy. All patients presented with fever. Social contact with subject positive for COVID-19 was declared in only one of the three cases. In all cases, laboratory findings showed lymphopenia and elevated C-reactive protein (CRP). Chest x-ray and computed tomography showed bilateral ground-glass opacities, shadowing, interstitial abnormalities, and "crazy paving" pattern which evolved with superimposition of consolidations in one patient. All patients received antiviral therapy based on ritonavir and lopinavir, associated with hydroxychloroquine. Despite treatment, two patients with advanced cancers died after 39 and 17 days of hospitalization, while the patient with lung cancer was dismissed at home, in good conditions.<br/>Copyright &#xa9; 2020 Japanese Society of Chemotherapy and The Japanese Association for Infectious Diseases

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1. **EACH: A phase II study evaluating the safety and anti-tumour activity of avelumab and cetuximab in recurrent/metastatic squamous cell carcinomas**  
   Forster M. Annals of Oncology 2020;31:No page numbers.

Background: Patients with R/M SCC have low response rates to second line therapies, including PD-1 inhibitors nivolumab and pembrolizumab, representing an area of unmet clinical need. Cetuximab has modest activity as a single agent but potentiates the activity of radiotherapy in locally advanced head & neck SCC (HNSCC) and chemotherapy in R/M HNSCC. Cetuximab initiates Natural Killer cell antibody-dependent cell-mediated cytotoxicity, resulting in an anti-tumour immune response and the potential to augment the activity of PD-1/PD-L1 inhibition. <br/>Method(s): Trial entry required histologically confirmed R/M SCC of any site, unselected by PD-L1 expression, considered incurable by local therapies and no previous treatment with cetuximab for recurrent/metastatic disease. Prior therapy with anti-PD-1, anti-PD-L1 or anti-PD-L2 was excluded. Patients had avelumab 10 mg/kg + cetuximab 500 mg/m<sup>2</sup> intravenously every 2 weeks, for up to 1 year. Primary endpoint was occurrence of dose-limiting toxicity within 42 days of treatment starting, graded using CTCAE v5. Secondary endpoints were objective response (ORR) and disease control rate (DCR) at 6 and 12 months using iRECIST. <br/>Result(s): 16 patients, median age 58 years (range 34 - 88), were enrolled from 2 UK hospitals between July 2018 and October 2019. The trial stopped after completing the safety run-in. 5 patients remain on treatment, 9 stopped treatment early (7 disease progression, 1 patient choice, 1 due to risk of COVID-19). 2 patients died whilst on treatment (both unrelated to trial treatment). Grade 3 AEs were seen in 4 patients and grade 5 in 1 patient. None were related to trial treatment. No patients experienced dose-limiting toxicity. Of 10 patients evaluable for response by iRECIST 2 (20%) had complete response, 3 (30%) had partial response and 4 (40%) had stable disease as their best response, representing an ORR of 50%. One patient had confirmed disease progression. In 6 patients who remained on trial for &gt;6 months, all 6 had disease control at 6 months (2 CR, 1 PR, 3 SD). <br/>Conclusion(s): Avelumab + cetuximab is safe and tolerable, and demonstrates promising efficacy in R/M SCC patients. Clinical trial identification: NCT03494322; 20/03/2018; Sponsor reference: UCL/17/0560. Legal entity responsible for the study: University College London. <br/>Funding(s): Merck KGaA. Disclosure: M. Forster: Advisory/Consultancy, Travel/Accommodation/Expenses: BMS; Advisory/Consultancy, Research grant/Funding (institution), Travel/Accommodation/Expenses: Merck; Advisory/Consultancy, Research grant/Funding (institution), Travel/Accommodation/Expenses: MSD; Advisory/Consultancy: Novartis; Advisory/Consultancy: PharmaMar; Advisory/Consultancy, Travel/Accommodation/Expenses: Roche; Advisory/Consultancy: Nanobiotix; Advisory/Consultancy, Travel/Accommodation/Expenses: Guardant Health; Advisory/Consultancy: Oxford VacMedix; Advisory/Consultancy, Research grant/Funding (institution), Travel/Accommodation/Expenses: AstraZeneca; Advisory/Consultancy: Takeda; Research grant/Funding (institution): Boehringer Ingelheim; Travel/Accommodation/Expenses: Celgene. J. Sacco: Honoraria (self), Research grant/Funding (institution), Travel/Accommodation/Expenses: BMS; Honoraria (self), Advisory/Consultancy, Travel/Accommodation/Expenses: MSD; Honoraria (self), Advisory/Consultancy: Amgen; Honoraria (self), Advisory/Consultancy, Research grant/Funding (institution): Immunocore; Honoraria (self), Advisory/Consultancy: Delcath; Honoraria (self): Pierre Fabre; Research grant/Funding (institution): AstraZeneca. A. Kong: Honoraria (self), Advisory/Consultancy, Speaker Bureau/Expert testimony, Travel/Accommodation/Expenses: Merck; Honoraria (self), Speaker Bureau/Expert testimony: BMS; Advisory/Consultancy: Centauri Therapeutics; Advisory/Consultancy: Amgen; Advisory/Consultancy, Research grant/Funding (institution): Puma Biotechnology; Speaker Bureau/Expert testimony, Travel/Accommodation/Expenses: MSD; Research grant/Funding (institution): AstraZeneca. G. Wheeler: Honoraria (self): AstraZeneca. J. Hartley: Full/Part-time employment: AstraZeneca; Advisory/Consultancy, Shareholder/Stockholder/Stock options: ADC Therapeutics. All other authors have declared no conflicts of interest.<br/>Copyright &#xa9; 2020

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1. **Elevations of serum cancer biomarkers correlate with severity of COVID-19**  
   Wei X. Journal of Medical Virology 2020;92(10):2036-2041.

In this retrospective study, we evaluated the levels of a series of serum biomarkers in coronavirus disease 2019 (COVID-19) patients (mild: 131; severe: 98; critical: 23). We found that there were significant increases in levels of human epididymis protein 4 (HE4) (73.6 +/- 38.3 vs 46.5 +/- 14.7 pmol/L; P &lt;.001), cytokeratin-19 fragment (CYFRA21-1) (2.2 +/- 0.9 vs 1.9 +/- 0.8 mug/L; P &lt;.001), carcinoembryonic antigen (CEA) (3.4 +/- 2.2 vs 2.1 +/- 1.2 mug/L; P &lt;.001), carbohydrate antigens (CA) 125 (18.1 +/- 13.5 vs 10.5 +/- 4.6 mug/L; P &lt;.001), and 153 (14.4 +/- 8.9 vs 10.1 +/- 4.4 mug/L; P &lt;.001) in COVID-19 mild cases as compared to normal control subjects; their levels showed continuous and significant increases in severe and critical cases (HE4, CYFRA21-1, and CA125: P &lt;.001; CEA and CA153: P &lt;.01). Squamous cell carcinoma antigen (SCC) and CA199 increased significantly only in critical cases of COVID-19 as compared with mild and severe cases and normal controls (P &lt;.01). There were positive associations between levels of C-reactive protein and levels of HE4 (R =.631; P &lt;.001), CYFRA21-1 (R =.431; P &lt;.001), CEA (R =.316; P &lt;.001), SCC (R =.351; P &lt;.001), CA153 (R =.359; P &lt;.001) and CA125 (R =.223; P =.031). We concluded that elevations of serum cancer biomarkers positively correlated with the pathological progressions of COVID-19, demonstrating diffuse and acute pathophysiological injuries in COVID-19.<br/>Copyright &#xa9; 2020 Wiley Periodicals LLC

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1. **Estimacion del efecto en el tamano y la supervivencia de los tumores cutaneos debido al confinamiento por COVID-19: modelo basado en un crecimiento exponencialEstimated Effect of COVID-19 Lockdown on Skin Tumor Size and Survival: An Exponential Growth Model**  
   Tejera-Vaquerizo A. Actas Dermo-Sifiliograficas 2020;111(8):629-638.

Background and objectives: Spain is in a situation of indefinite lockdown due to the ongoing coronavirus disease 2019 (COVID-19) pandemic. One of the consequences of this lockdown is delays in medical and surgical procedures for common diseases. The aim of this study was to model the impact on survival of tumor growth caused by such delays in patients with squamous cell carcinoma (SCC) and melanoma. <br/>Material(s) and Method(s): Multicenter, retrospective, observational cohort study. We constructed an exponential growth model for both SCC and melanoma to estimate tumor growth between patient-reported onset and surgical excision at different time points. <br/>Result(s): Data from 200 patients with SCC of the head and neck and 1000 patients with cutaneous melanoma were included. An exponential growth curve was calculated for each tumor type and we estimated tumor size after 1, 2, and 3 months of potential surgical delay. The proportion of patients with T3 SCC (diameter &gt;4cm or thickness &gt;6 mm) increased from 41.5% (83 patients) in the initial study group to an estimated 58.5%, 70.5%, and 72% after 1, 2, and 3 months of delay. Disease-specific survival at 2, 5, and 10 years in patients whose surgery was delayed by 3 months decreased by 6.2%, 8.2%, and 5.2%, respectively. The proportion of patients with ultrathick melanoma (&gt;6 mm) increased from 6.9% in the initial study group to 21.9%, 30.2%, and 30.2% at 1, 2, and 3 months. Five- and 10-year disease-specific survival both decreased by 14.4% in patients treated after a potential delay of 3 months. <br/>Conclusion(s): In the absence of adequate diagnosis and treatment of SCC and melanoma in the current lockdown situation in Spain, we can expect to see to a considerable increase in large and thick SCCs and melanomas. Efforts must be taken to encourage self-examination and facilitate access to dermatologists in order to prevent further delays.<br/>Copyright &#xa9; 2020

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1. **Heterogeneous addiction to transforming growth factor-beta signalling in recessive dystrophic epidermolysis bullosa-associated cutaneous squamous cell carcinoma.**  
   Dayal J. H S. The British journal of dermatology 2020;:No page numbers.

BACKGROUNDRecessive dystrophic epidermolysis bullosa (RDEB) is associated with a high mortality rate due to the development of life-threatening, metastatic cutaneous squamous cell carcinoma (cSCC). Elevated transforming growth factor-beta (TGF-β) signalling is implicated in cSCC development and progression in patients with RDEB.OBJECTIVESTo determine the effect of exogenous and endogenous TGF-β signalling in RDEB cSCC with a view to assessing the potential of targeting TGF-β signalling for RDEB cSCC therapy.METHODSA panel of 11 patient-derived RDEB cSCC primary tumour keratinocyte cell lines (SCCRDEBs) were tested for their signalling and proliferation responses to exogenous TGF-β. Their responses to TGF-β receptor type-1 (TGFBR1) kinase inhibitors [SB-431542 and AZ12601011 (AZA01)] were tested using in vitro proliferation, clonogenicity, migration and three-dimensional invasion assays, and in vivo tumour xenograft assays.RESULTSAll SCCRDEBs responded to exogenous TGF-β by activation of canonical SMAD signalling and proliferative arrest. Blocking endogenous signalling by treatment with SB-431542 and AZ12601011 significantly inhibited proliferation (seven of 11), clonogenicity (six of 11), migration (eight of 11) and invasion (six of 11) of SCCRDEBs. However, these TGFBR1 kinase inhibitors also promoted proliferation and clonogenicity in two of 11 SCCRDEB cell lines. Pretreatment of in vitro TGFBR1-addicted SCCRDEB70 cells with SB-431542 enhanced overall survival and reduced tumour volume in subcutaneous xenografts but had no effect on nonaddicted SCCRDEB2 cells in these assays.CONCLUSIONSTargeting TGFBR1 kinase activity may have therapeutic benefit in the majority of RDEB cSCCs. However, the potential tumour suppressive role of TGF-β signalling in a subset of RDEB cSCCs necessitates biomarker identification to enable patient stratification before clinical intervention.

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1. **Hypofractionated radiotherapy alone with 2.4 Gy per fraction for head and neck cancer during the COVID-19 pandemic: The Princess Margaret experience and proposal.**  
   Huang Shao Hui Cancer 2020;126(15):3426-3437.

BACKGROUNDThe objective of this study was to identify a subgroup of patients with head and neck squamous cell carcinoma (HNSCC) who might be suitable for hypofractionated radiotherapy (RT-hypo) during the COVID-19 pandemic.METHODSHNSCC cases (oropharynx/larynx/hypopharynx) treated with definitive RT-hypo (60 Gy in 25 fractions over 5 weeks), moderately accelerated radiotherapy (RT-acc) alone (70 Gy in 35 fractions over 6 weeks), or concurrent chemoradiotherapy (CCRT) during 2005-2017 were included. Locoregional control (LRC) and distant control (DC) after RT-hypo, RT-acc, and CCRT were compared for various subgroups.RESULTSThe study identified 994 human papillomavirus-positive (HPV+) oropharyngeal squamous cell carcinoma cases (with 61, 254, and 679 receiving RT-hypo, RT-acc, and CCRT, respectively) and 1045 HPV- HNSCC cases (with 263, 451, and 331 receiving RT-hypo, RT-acc, and CCRT, respectively). The CCRT cohort had higher T/N categories, whereas the radiotherapy-alone patients were older. The median follow-up was 4.6 years. RT-hypo, RT-acc, and CCRT produced comparable 3-year LRC and DC for HPV+ T1-2N0-N2a disease (seventh edition of the TNM system [TNM-7]; LRC, 94%, 100%, and 94%; P = .769; DC, 94%, 100%, and 94%; P = .272), T1-T2N2b disease (LRC, 90%, 94%, and 97%; P = .445; DC, 100%, 96%, and 95%; P = .697), and T1-2N2c/T3N0-N2c disease (LRC, 89%, 93%, and 95%; P = .494; DC, 89%, 90%, and 87%; P = .838). Although LRC was also similar for T4/N3 disease (78%, 84%, and 88%; P = .677), DC was significantly lower with RT-hypo or RT-acc versus CCRT (67%, 65%, and 87%; P = .005). For HPV- HNSCC, 3-year LRC and DC were similar with RT-hypo, RT-acc, and CCRT in stages I and II (LRC, 85%, 89%, and 100%; P = .320; DC, 99%, 98%, and 100%; P = .446); however, RT-hypo and RT-acc had significantly lower LRC in stage III (76%, 69%, and 91%; P = .006), whereas DC rates were similar (92%, 85%, and 90%; P = .410). Lower LRC in stage III predominated in patients with laryngeal squamous cell carcinoma receiving RT-acc (62%) but not RT-hypo (80%) or CCRT (92%; RT-hypo vs CCRT: P = .270; RT-acc vs CCRT: P = .004). CCRT had numerically higher LRC in comparison with RT-hypo or RT-acc in stage IV (73%, 65%, and 66%; P = .336).CONCLUSIONSIt is proposed that RT-hypo be considered in place of CCRT for HPV+ T1-T3N0-N2c (TNM-7) HNSCCs, HPV- T1-T2N0 HNSCCs, and select stage III HNSCCs during the COVID-19 outbreak.

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1. **Management of primary skin cancer during a pandemic: Multidisciplinary recommendations**  
   Baumann B.C. Cancer 2020;126(17):3900-3906.

During the coronavirus disease 2019 (COVID-19) pandemic, providers and patients must engage in shared decision making regarding the pros and cons of early versus delayed interventions for localized skin cancer. Patients at highest risk of COVID-19 complications are older; are immunosuppressed; and have diabetes, cancer, or cardiopulmonary disease, with multiple comorbidities associated with worse outcomes. Physicians must weigh the patient's risk of COVID-19 complications in the event of exposure against the risk of worse oncologic outcomes from delaying cancer therapy. Herein, the authors have summarized current data regarding the risk of COVID-19 complications and mortality based on age and comorbidities and have reviewed the literature assessing how treatment delays affect oncologic outcomes. They also have provided multidisciplinary recommendations regarding the timing of local therapy for early-stage skin cancers during this pandemic with input from experts at 11 different institutions. For patients with Merkel cell carcinoma, the authors recommend prioritizing treatment, but a short delay can be considered for patients with favorable T1 disease who are at higher risk of COVID-19 complications. For patients with melanoma, the authors recommend delaying the treatment of patients with T0 to T1 disease for 3 months if there is no macroscopic residual disease at the time of biopsy. Treatment of tumors &gt;=T2 can be delayed for 3 months if the biopsy margins are negative. For patients with cutaneous squamous cell carcinoma, those with Brigham and Women's Hospital T1 to T2a disease can have their treatment delayed for 2 to 3 months unless there is rapid growth, symptomatic lesions, or the patient is immunocompromised. The treatment of tumors &gt;=T2b should be prioritized, but a 1-month to 2-month delay is unlikely to worsen disease-specific mortality. For patients with squamous cell carcinoma in situ and basal cell carcinoma, treatment can be deferred for 3 months unless the individual is highly symptomatic.<br/>Copyright &#xa9; 2020 American Cancer Society

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1. **Multidisciplinary care of epidermolysis bullosa during the COVID-19 pandemic-Consensus: Recommendations by an international panel of experts.**  
   Murrell Dedee F. Journal of the American Academy of Dermatology 2020;83(4):1222-1224.

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=b261d0fee4d5b4f249d787871e127f38)

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1. **Multiple skin squamous cell carcinomas in junctional epidermolysis bullosa due to altered laminin-332 function**  
   Fortugno P. International Journal of Molecular Sciences 2020;21(4):No page numbers.

Variably reduced expression of the basement membrane component laminin-332 (alpha3abeta3gamma2) causes junctional epidermolysis bullosa generalized intermediate (JEB-GI), a skin fragility disorder with an increased susceptibility to squamous cell carcinoma (SCC) development in adulthood. Laminin-332 is highly expressed in several types of epithelial tumors and is central to signaling pathways that promote SCC tumorigenesis. However, laminin-332 mutations and expression in individuals affected by JEB-GI and suffering from recurrent SCCs have been poorly characterized. We studied a JEB-GI patient who developed over a hundred primary cutaneous SCCs. Molecular analysis combined with gene expression studies in patient skin and primary keratinocytes revealed that the patient is a functional hemizygous for the p.Cys1171\* mutant allele which is transcribed in a stable mRNA encoding for a beta3 chain shortened of the last two C-terminal amino acids (Cys1171-Lys1172). The lack of the Cys1171 residue involved in the C-terminal disulphide bond to gamma2 chain did not prevent assembly, secretion, and proteolytic processing of the heterotrimeric molecule. Immunohistochemistry of SCC specimens revealed accumulation of mutant laminin-332 at the epithelial-stromal interface of invasive front. We conclude that the C-terminal disulphide bond is a structural element crucial for laminin-332 adhesion function in-vivo. By saving laminin-332 amount, processing, and signaling role the p.Cys1171\* mutation may allow intrinsic pro-tumorigenic properties of the protein to be conveyed, thus contributing to invasiveness and recurrence of SCCs in this patient.<br/>Copyright &#xa9; 2020 by the authors. Licensee MDPI, Basel, Switzerland.

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1. **Nonsurgical management of resectable oral cavity cancer in the wake of COVID-19: A rapid review and meta-analysis.**  
   Forner David Oral oncology 2020;109:104849.

OBJECTIVESurgery is the preferred treatment modality for oral squamous cell carcinoma (OSCC). However, due to limited resources, re-assessment of treatment paradigms in the wake of the Coronavirus Disease 2019 (COVID-19) pandemic is urgently required. In this rapid review, we described contemporary oncological outcomes for OSCC using non-surgical modalities.METHODSA systematic literature search was conducted for articles published between January 1, 2010 and April 1, 2020 on MEDLINE and Cochrane CENTRAL. Studies were included if they contained patients with OSCC treated with either neoadjuvant, induction, or definitive radiotherapy, chemotherapy, immunotherapy, or combination thereof, and an outcome of overall survival.RESULTSIn total, 36 articles were included. Definitive radiotherapy or chemoradiotherapy were the focus of 18 articles and neoadjuvant chemotherapy or chemoradiotherapy were the focus of the other 18 articles. In early stage OSCC, definitive radiotherapy, with or without concurrent chemotherapy, was associated with a significantly increased hazard of death compared to definitive surgery (HR: 2.39, 95% CI: 1.56-3.67, I2: 63%). The hazard of death was non-significantly increased with definitive chemoradiotherapy in studies excluding early disease (HR: 1.98, 95% CI: 0.85-4.64, I2: 84%). Two recent randomized control trials have been conducted, demonstrating no survival advantage to neoadjuvant chemotherapy.CONCLUSIONThis review suggests that primary radiotherapy and chemoradiotherapy are inferior to surgical management for OSCC. Strategies for surgical delay warranting consideration are sparse, but may include several neoadjuvant regimens, recognizing these regimens may not offer a survival benefit over definitive surgery alone.

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1. **Perspectives on the recommendations for skin cancer management during the COVID-19 pandemic**  
   Geskin L.J. Journal of the American Academy of Dermatology 2020;83(1):295-296.

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1. **Radiotherapy and Systemic Treatment for Non-melanoma Skin Cancer in the COVID-19 Pandemic.**  
   Rembielak A. Clinical oncology (Royal College of Radiologists (Great Britain)) 2020;32(7):417-419.

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1. **Reduction in skin cancer diagnoses in the UK during the COVID-19 pandemic**  
   Andrew T.W. Clinical and Experimental Dermatology 2020;:No page numbers.

The UK healthcare system, including skin cancer departments, has been profoundly affected by the COVID-19 pandemic. Despite service capacity and a worldwide increase in incidence, anecdotal reports suggest a decline in skin cancer diagnoses following COVID-19. To determine if there has been a decrease in skin cancer diagnosis in the UK in the COVID-19 era, we analysed data from the Northern Cancer Network from 23 March 2020 to 23 June 2020 and compared it with the same period in 2019 (pre-COVID). In the COVID period, there was a decrease of 68.61% in skin cancer diagnoses, from 3619 to 1136 (P &lt; 0.01). Surprisingly, skin cancer waiting times were also reduced in the COVID period compared to the pre-COVID period (median of 8 and 12 days, respectively; P &lt; 0.001). Collectively, these data highlight a statistically significant reduction in both skin cancer diagnoses and waiting times during the COVID period.<br/>Copyright &#xa9; 2020 The Authors. Clinical and Experimental Dermatology published by John Wiley & Sons Ltd on behalf of British Association of Dermatologists

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1. **Reduction in skin cancer diagnosis, and overall cancer referrals, during the COVID-19 pandemic**  
   Earnshaw C.H. British Journal of Dermatology 2020;183(4):792-794.

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1. **Respiratory and pulmonary complications in head and neck cancer patients: Evidence-based review for the COVID-19 era.**  
   Silverman Dustin A. Head & neck 2020;42(6):1218-1226.

BACKGROUNDPulmonary complications and infections frequently affect patients with head and neck squamous cell carcinoma (HNSCC). Common characteristics can predispose these patients to the development of severe respiratory illness, which may be particularly relevant during the 2019 coronavirus disease (COVID-19) pandemic.METHODSA scoping review was performed to assess the impact of pulmonary comorbidities and adverse respiratory outcomes in HNSCC patients.RESULTSAdvanced age, history of tobacco and alcohol abuse, and cardiopulmonary comorbidities are significant risk factors for the development of adverse respiratory outcomes. Treatment toxicities from radiation or chemoradiation therapy significantly increase these risks.CONCLUSIONRespiratory complications are a frequent cause of morbidity and mortality among HNSCC patients, and the COVID-19 pandemic may disproportionately affect this population. Interventions designed to decrease smoking and alcohol use, improve oral hygiene, and aggressively manage medical comorbidities are important to the long-term management and health of these patients.

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1. **SARS-CoV-2 detection in formalin-fixed paraffin-embedded tissue specimens from surgical resection of tongue squamous cell carcinoma.**  
   Guerini-Rocco Elena Journal of clinical pathology 2020;73(11):754-757.

In the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic, pathologists can be exposed to infection handling surgical specimens. Guidelines related to safety procedures in the laboratory have been released. However, there is a lack of studies performed on biopsy and surgical resection specimens. Here we report the detection of SARS-CoV-2 in formalin-fixed paraffin-embedded samples from surgical resection of tongue squamous cell carcinoma of a patient who developed COVID-19 postsurgery. RNA of SARS-CoV-2 strain was detected in the tumour and the normal submandibular gland samples using real-time PCR-based assay. No viral RNA was found in metastatic and reactive lymph nodes. We demonstrated that SARS-CoV-2 RNA can be detected in routine histopathological samples even before COVID-19 disease development. These findings may give important information on the possible sites of infection or virus reservoir, and highlight the necessity of proper handling and fixation before sample processing.

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1. **Skin cancer and COVID-19**  
   Goldust M. Dermatologic Therapy 2020;:No page numbers.

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1. **Skin cancer triage and management during COVID-19 pandemic**  
   Tagliaferri L. Journal of the European Academy of Dermatology and Venereology 2020;34(6):1136-1139.

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1. **Skin cancers: how to balance the risks and benefits of surgery during COVID-19 pandemic (a Northern Italy single-center experience)**  
   Pavia G. International Journal of Dermatology 2020;59(10):1287-1289.

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1. **Surgical management of squamous cell carcinoma arising in patients affected by epidermolysis bullosa: a comparative study**  
   Paganelli A. International Wound Journal 2020;17(2):519-521.

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1. **The COVID-19 outbreak in dermatologic surgery: resetting clinical priorities**  
   Rossi E. Journal of the European Academy of Dermatology and Venereology 2020;34(10):No page numbers.

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1. **The effect of the COVID-19 pandemic on skin cancer surgery in the United Kingdom: a national, multi-centre, prospective cohort study and survey of Plastic Surgeons.**  
   Nolan GS The British journal of surgery 2020;:No page numbers.

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1. **The Evolution of Care of Cancers of the Head and Neck Region: State of the Science in 2020.**  
   Yan Flora Cancers 2020;12(6):No page numbers.

Cancers that arise in the head and neck region are comprised of a heterogeneous group of malignancies that include carcinogen- and human papillomavirus (HPV)-driven mucosal squamous cell carcinoma as well as skin cancers such as cutaneous squamous cell carcinoma, basal cell carcinoma, melanoma, and Merkel cell carcinoma. These malignancies develop in critical areas for eating, talking, and breathing and are associated with substantial morbidity and mortality despite advances in treatment. Understanding of advances in the management of these various cancers is important for all multidisciplinary providers who care for patients across the cancer care continuum. Additionally, the recent Coronavirus Disease 2019 (COVID-19) pandemic has necessitated adaptations to head and neck cancer care to accommodate the mitigation of COVID-19 risk and ensure timely treatment. This review explores advances in diagnostic criteria, prognostic factors, and management for subsites including head and neck squamous cell carcinoma and the various forms of skin cancer (basal cell carcinoma, cutaneous squamous cell carcinoma, Merkel cell carcinoma, and melanoma). Then, this review summarizes emerging developments in immunotherapy, radiation therapy, cancer survivorship, and the delivery of care during the COVID-19 era.

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1. **TMPRSS2, a SARS-CoV-2 internalization protease is downregulated in head and neck cancer patients.**  
   Sacconi Andrea Journal of experimental & clinical cancer research : CR 2020;39(1):200.

BACKGROUNDSARS-coronavirus-2 enters host cells through binding of the Spike protein to ACE2 receptor and subsequent S priming by the TMPRSS2 protease. We aim to assess differences in both ACE2 and TMPRSS2 expression in normal tissues from oral cavity, pharynx, larynx and lung tissues as well as neoplastic tissues from the same areas.METHODSThe study has been conducted using the TCGA and the Regina Elena Institute databases and validated by experimental model in HNSCC cells. We also included data from one COVID19 patient who went under surgery for HNSCC.RESULTSTMPRSS2 expression in HNSCC was significantly reduced compared to the normal tissues. It was more evident in women than in men, in TP53 mutated versus wild TP53 tumors, in HPV negative patients compared to HPV positive counterparts. Functionally, we modeled the multivariate effect of TP53, HPV, and other inherent variables on TMPRSS2. All variables had a statistically significant independent effect on TMPRSS2. In particular, in tumor tissues, HPV negative, TP53 mutated status and elevated TP53-dependent Myc-target genes were associated with low TMPRSS2 expression. The further analysis of both TCGA and our institutional HNSCC datasets identified a signature anti-correlated to TMPRSS2. As proof-of-principle we also validated the anti-correlation between microRNAs and TMPRSS2 expression in a SARS-CoV-2 positive HNSCC patient tissues Finally, we did not find TMPRSS2 promoter methylation.CONCLUSIONSCollectively, these findings suggest that tumoral tissues, herein exemplified by HNSCC and lung cancers might be more resistant to SARS-CoV-2 infection due to reduced expression of TMPRSS2. These observations may help to better assess the frailty of SARS-CoV-2 positive cancer patients.

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1. **What is the impact of COVID-19 on head and neck squamous cell carcinoma patients?**  
   Dolan Sean Evidence-based dentistry 2020;21(2):52-53.

Data sources It is not made clear in this review the different databases selected or how they conducted their search. The studies used are from 1975-2020Study selection The authors have performed a scoping review using 84 studies ranging from 1975-2020. The majority of these are from before the 2019-2020 COVID-19 outbreak period. This is indicative of the lack of evidence on this topic and exemplifies why a scoping review was carried out rather than a systematic review. The studies that were reviewed were predominately cohort and case studies. With regards to previous treatment outcomes, a few systematic reviews were included, but again, the novel nature of this outbreak means that largely, there are only cohort or case studies available for review.Data extraction and synthesis There are ten authors, with no indication of how many performed the literature review or if a mediator was involved in the final decision making on what papers would be reviewed.Results Excessive consumption of alcohol, history of tobacco use, an ageing population, and comorbidities such as cardiopulmonary issues are substantial risk factors for episodes of unfavourable respiratory outcomes. The risk of these outcomes is increased by some of the toxic effects of treatments such as chemotherapy or radiotherapy.Conclusions The COVID-19 outbreak has a potentially disproportionate impact on the cohort of head and neck cancer patients, and the respiratory effects this has on these patients may increase morbidity and mortality. It is important to include alcohol and smoking cessation, along with good oral hygiene instruction in the care of these patients.

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1. **Epidemiology and natural history of cutaneous squamous cell carcinoma in recessive dystrophic epidermolysis bullosa patients: 20 years' experience of a reference centre in Spain.**  
   Castelo B. Clinical & translational oncology : official publication of the Federation of Spanish Oncology Societies and of the National Cancer Institute of Mexico 2019;21(11):1573-1577.

BACKGROUNDCutaneous squamous cell carcinoma (cSCC) is the leading cause of death in patients with recessive dystrophic epidermolysis bullosa (RDEB). We provide the management and prognosis of cSCC in RDEB patients at a Spanish reference center.MATERIALS AND METHODSWe retrospectively included patients with RDEB attended in La Paz University Hospital from November 1988 to October 2018.RESULTSFourteen patients developed at least one cSCC. Tumors were predominantly well differentiated. Nearly half of the tumors have recurred. Median time to first recurrence was 23.4 months (95% CI: 17.2-29.5). Five patients have developed distant metastases. Median overall survival (mOS) was 136.5 months since the diagnosis of the first cSCC (95% CI: 30.6-242.3). When distant metastases occurred, mOS was 6.78 months (95% CI: 1.94-11.61).CONCLUSIONScSCC is a life-threatening complication of RDEB patients. Although tumors are usually well differentiated, they tend to relapse. This is the first Spanish report of cSCC arising in RDEB patients.

1. **Epidermolysis Bullosa-Associated Squamous Cell Carcinoma: From Pathogenesis to Therapeutic Perspectives.**  
   Condorelli Angelo Giuseppe International journal of molecular sciences 2019;20(22):No page numbers.

Epidermolysis bullosa (EB) is a heterogeneous group of inherited skin disorders determined by mutations in genes encoding for structural components of the cutaneous basement membrane zone. Disease hallmarks are skin fragility and unremitting blistering. The most disabling EB (sub)types show defective wound healing, fibrosis and inflammation at lesional skin. These features expose patients to serious disease complications, including the development of cutaneous squamous cell carcinomas (SCCs). Almost all subjects affected with the severe recessive dystrophic EB (RDEB) subtype suffer from early and extremely aggressive SCCs (RDEB-SCC), which represent the first cause of death in these patients. The genetic determinants of RDEB-SCC do not exhaustively explain its unique behavior as compared to low-risk, ultraviolet-induced SCCs in the general population. On the other hand, a growing body of evidence points to the key role of tumor microenvironment in initiation, progression and spreading of RDEB-SCC, as well as of other, less-investigated, EB-related SCCs (EB-SCCs). Here, we discuss the recent advances in understanding the complex series of molecular events (i.e., fibrotic, inflammatory, and immune processes) contributing to SCC development in EB patients, cross-compare tumor features in the different EB subtypes and report the most promising therapeutic approaches to counteract or delay EB-SCCs.

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1. **Epidermolysis bullosa: Advances in research and treatment**  
   Prodinger C. Experimental Dermatology 2019;28(10):1176-1189.

Epidermolysis bullosa (EB) is the umbrella term for a group of rare inherited skin fragility disorders caused by mutations in at least 20 different genes. There is no cure for any of the subtypes of EB resulting from different mutations, and current therapy only focuses on the management of wounds and pain. Novel effective therapeutic approaches are therefore urgently required. Strategies include gene-, protein- and cell-based therapies. This review discusses molecular procedures currently under investigation at the EB House Austria, a designated Centre of Expertise implemented in the European Reference Network for Rare and Undiagnosed Skin Diseases. Current clinical research activities at the EB House Austria include newly developed candidate substances that have emerged out of our translational research initiatives as well as already commercially available medications that are applied in off-licensed indications. Squamous cell carcinoma is the major cause of death in severe forms of EB. We are evaluating immunotherapy using an anti-PD1 monoclonal antibody as a palliative treatment option for locally advanced or metastatic squamous cell carcinoma of the skin unresponsive to previous systemic therapy. In addition, we are evaluating topical calcipotriol and topical diacerein as potential agents to improve the healing of skin wounds in EBS patients. Finally, the review will highlight the recent advancements of gene therapy development for EB.<br/>Copyright &#xa9; 2019 The Authors. Experimental Dermatology Published by John Wiley & Sons Ltd

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1. **El paradigma del carcinoma espinocelular en pacientes con epidermolisis ampollosaThe paradigm of squamous cell carcinoma in patients with epidermolysis bullous**  
   Salas-Alanis J.C. Dermatologia Revista Mexicana 2017;61(2):83-85.

1. **Plaveiselcelcarcinomen en epidermolysis bullosaSquamous cell carcinomas and epidermolysis bullosa**  
   Spoorenberg E. Nederlands Tijdschrift voor Dermatologie en Venereologie 2017;27(6):322-325.

A 27-year-old male with recessive dystrophic epidermolysis bullosa, severe generalized (RDEB-SG), presented with a tumor on the left lateral malleolus that had been present for six months. Histopathologic examination showed a moderate to well differentiated squamous cell carcinoma (SCC), and excision with an 1 cm margin was performed. After four years, he developed a recurrence of this tumor, which was localized at the margin of the previously excised area. Excision with 1 cm margin was incomplete, therefore complete re-excision was subsequently performed. During follow up, he developed two more SCC's, which were both located near the aforementioned SCC. Some forms of EB are associated with a higher risk of developing SCCs. These SCCs usually arise at sites of chronic wounds and scarring. In patients with RDEBSG, the cumulative risk of having at least one SCC is 90.1[%] by the age of 55 years. Despite the fact that most SCCs are well differentiated, they generally behave more aggressively than conventional SCCs, with a higher risk to metastasize. SCCs are therefore the leading cause of death in patients with RDEB. Recently, best practice guidelines for EB-associated cutaneous SCC were published for surveillance, tumor staging and treatment strategies. This can help the treating physician in decision making. Surgical excision with wide margins (2 cm) is the treatment of choice for SCCs in EB.

1. **Developing a cancer immunogene therapy approach for Epidermolysis bullosa-associated squamous cell carcinoma**  
   Kienzl M. Journal of Investigative Dermatology 2016;136(9):No page numbers.

Patients suffering from the rare genetic skin blistering disorder recessive dystrophic epidermolyiss bullosa have an increased risk of developing aggressive cutaneous squamous cell carcinoma which results in a mortality rate of over 80% by age 50 in these patients. Surgery over a wide area is necessary due to the metastasising nature of the tumor and remains the primary treatment option. However recurrence rates are high and thus novel strategies are needed. The success of immune checkpoint blockers in the therapy of advanced solid tumors, including melanoma, underscores the potential of harnessing the immune system to fight cancer. We hypothesized that it is possible to exploit a pre-existing immune memory against common childhood pathogens and redirect this immune response toward tumor cells engineered to express the antigens of interest. To provide proof of principle, and as a first step, we established a mouse model with functional immunity against known viral CTL epitopes. Using a gene gun immunization protocol, C3H mice (H-2K<sup>k</sup>) were vaccinated with DNA plasmids encoding a leader sequence, the CTL epitope, and a T helper epitope. The quality of the antigen-specific immunity was investigated 7 days after the final boost both in vivo and in vitro by CTL-killing, cytokine-ELISA, ELISPOT, and T cell proliferation assays.We successfully generated functional CD8+ CTL cells by our immunization protocol, observing up to 80% specific lysis of target peptide-loaded syngeneic donor splenocytes in vivo. Additionally, we detected a mean 20-fold induction in IFNgamma-producing cells upon restimulation with the target peptides in vitro. Using this mouse model, we can then evaluate the efficiency with which memory CD8+ CTLs are able to control or clear syngeneic tumor cells that express the target epitopes in vivo.

1. **Management of cutaneous squamous cell carcinoma in patients with epidermolysis bullosa**  
   Krupiczojc M.A. British Journal of Dermatology 2016;174(1):15.

This article summarizes recommendations reached following a systematic literature review and expert consensus on the diagnosis and management of cutaneous squamous cell carcinomas in people with epidermolysis bullosa. The guidelines are intended to help inform decision making by clinicians dealing with this complex complication of a devastating disease.

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1. **Management of cutaneous squamous cell carcinoma in patients with epidermolysis bullosa: Best clinical practice guidelines**  
   Mellerio J.E. British Journal of Dermatology 2016;174(1):56-67.

This article summarizes recommendations reached following a systematic literature review and expert consensus on the diagnosis and management of cutaneous squamous cell carcinomas in people with epidermolysis bullosa. The guidelines are intended to help inform decision making by clinicians dealing with this complex complication of a devastating disease.<br/>Copyright &#xa9; 2015 The Authors. British Journal of Dermatology published by John Wiley & Sons Ltd on behalf of British Association of Dermatologists.

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1. **Denosumab therapy for refractory hypercalcemia secondary to squamous cell carcinoma of skin in epidermolysis bullosa**  
   Giri D. World Journal of Oncology 2015;6(2):345-348.

Hypercalcemia secondary to malignancy is rare in children and the majority is caused by tumor-produced parathyroid hormone-related protein (PTHrP). We report a case of hypercalcemia refractory to bisphosphonate and corticosteroid therapy, but responsive to denosumab. A 17-year-old boy with epidermolysis bullosa (EB) and advanced squamous cell carcinoma (SCC) of the left leg was referred with severe hypercalcemia (serum calcium, 4.2 mmol/L). The serum parathyroid hormone (PTH) was 0.7 pmol/L (1.1 - 6.9 pmol/L). The hypercalcemia was initially managed with hyperhydration, prednisolone and pamidronate. Following two infusions of pamidronate (1 mg/kg/dose), serum calcium fell to 2.87 mmol/L. However the hypercalcemia relapsed within a week (serum calcium, 3.61 mmol/L) needing aggressive management with intravenous fluids, prednisolone and two further doses of pamidronate. The serum calcium fell to 2.58 mmol/L over the first 4 days, but rose to 3.39 mmol/L 3 days later. As the hypercalcemia was refractory to bisphosphonate treatment, a trial dose of subcutaneous denosumab (60 mg) was administered following which the calcium fell to 2.86 mmol/L within 24 h and normocalcemia was sustained 4 days later. We report a case of refractory hypercalcemia secondary to malignant SCC, which responded well to denosumab therapy. To our knowledge, this is the first case of hypercalcemia of malignancy in an adolescent managed with denosumab.<br/>Copyright &#xa9; The authors.

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|  | **Source** | **Criteria** | **Results** |
| --- | --- | --- | --- |
| 1. | Medline | exp "CARCINOMA, SQUAMOUS CELL"/ | 133190 |
| 2. | Medline | ("Squamous Cell Carcinoma").ti,ab | 88394 |
| 3. | Medline | ("Cutaneous Squamous Cell Carcinoma").ti,ab | 2313 |
| 4. | Medline | (SCC).ti,ab | 21104 |
| 5. | Medline | (cSCC).ti,ab | 1077 |
| 6. | Medline | (1 OR 2 OR 3 OR 4 OR 5) | 168110 |
| 7. | Medline | \*"EPIDERMOLYSIS BULLOSA"/ | 2350 |
| 8. | Medline | ("Covid 19").ti,ab | 56732 |
| 9. | Medline | exp \*CORONAVIRUS/ | 25704 |
| 10. | Medline | \*PANDEMICS/ | 17201 |
| 11. | Medline | ("SARS Cov2").ti,ab | 751 |
| 12. | Medline | (8 OR 9 OR 10 OR 11) | 73863 |
| 13. | Medline | \*"WOUND HEALING"/ | 42975 |
| 14. | Medline | \*"DISEASE MANAGEMENT"/ | 18755 |
| 15. | Medline | \*"INFECTION CONTROL"/ | 14731 |
| 16. | Medline | \*"CANCER CARE FACILITIES"/ | 2836 |
| 17. | Medline | ("cancer care").ti,ab | 12777 |
| 18. | Medline | \*"MARGINS OF EXCISION"/ | 787 |
| 19. | Medline | ("wound care").ti,ab | 7503 |
| 20. | Medline | (13 OR 14 OR 15 OR 16 OR 17 OR 18 OR 19) | 98428 |
| 21. | Medline | \*"SKIN NEOPLASMS"/ | 104602 |
| 22. | Medline | ("skin cancer").ti,ab | 18576 |
| 23. | Medline | (21 OR 22) | 113064 |
| 24. | Medline | (6 AND 7 AND 12 AND 20) | 0 |
| 25. | Medline | (6 AND 7 AND 12) | 0 |
| 26. | Medline | (6 AND 7 AND 10) | 0 |
| 27. | Medline | (12 AND 20 AND 23) | 3 |
| 28. | Medline | (6 AND 7 AND 20) | 2 |
| 29. | Medline | exp \*"SQUAMOUS CELL CARCINOMA OF HEAD AND NECK"/ | 1466 |
| 30. | Medline | (7 AND 12 AND 20 AND 29) | 0 |
| 31. | Medline | (7 AND 12 AND 29) | 0 |
| 32. | Medline | (12 AND 29) | 8 |
| 33. | Medline | (7 AND 12) | 1 |
| 34. | EMBASE | \*"HEAD AND NECK SQUAMOUS CELL CARCINOMA"/ | 9423 |
| 35. | EMBASE | exp "SQUAMOUS CELL CARCINOMA"/ | 169149 |
| 36. | EMBASE | ("Squamous Cell Carcinoma").ti,ab | 122660 |
| 37. | EMBASE | ("Cutaneous Squamous Cell Carcinoma").ti,ab | 3419 |
| 38. | EMBASE | (SCC).ti,ab | 32094 |
| 39. | EMBASE | (cSCC).ti,ab | 1711 |
| 40. | EMBASE | (34 OR 35 OR 36 OR 37 OR 38 OR 39) | 203755 |
| 41. | EMBASE | \*"EPIDERMOLYSIS BULLOSA"/ | 2528 |
| 42. | EMBASE | ("Covid 19").ti,ab | 56153 |
| 43. | EMBASE | ("SARS Cov2").ti,ab | 821 |
| 44. | EMBASE | exp "CORONAVIRUS INFECTION"/ | 22020 |
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| 46. | EMBASE | \*CORONAVIRINAE/ | 1460 |
| 47. | EMBASE | \*PANDEMIC/ | 16820 |
| 48. | EMBASE | (42 OR 43 OR 44 OR 45 OR 46 OR 47) | 77791 |
| 49. | EMBASE | \*"SKIN CANCER"/ | 13091 |
| 50. | EMBASE | (40 AND 41 AND 48) | 0 |
| 51. | EMBASE | (48 AND 49) | 17 |
| 52. | EMBASE | (40 AND 48) | 79 |
| 53. | EMBASE | (35 AND 41 AND 48) | 0 |
| 54. | EMBASE | (35 AND 41 AND 45) | 0 |
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